

NDD

Australian Commodore &

AMIGA

For Professional and Home Users

Disaster Recovery

How to rescue lost data

New CDs

A guide to the latest

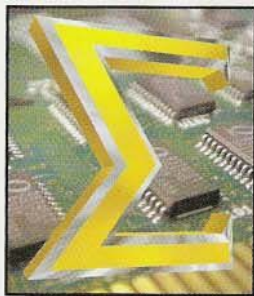
Brilliance 2.0

Paint in 24-bit on any Amiga

Review
Review



* Recommended Retail Price



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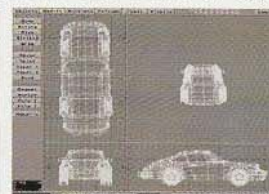


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LightWave 3D is an all-in-one photorealistic animation system. LightWave has been seen on TV shows like SeaQuest DSV, Babylon 5, Robocop, Star Trek: The Next Generation. Create objects with LightWave modeler. Lathe, extrude or Boolean drill. Use PostScript fonts to create 3D text objects. Add lighting effects and camera moves. No other 3D package offers this much power and flexibility combined with such an intuitive interface. LightWave comes with a free "LIGHTWAVE 3D ESSENTIALS" video tape to help you get animating fast. Lightwave 3D is the choice of professional 3D artists. There are other videos available that cover all aspects of LightWave 3D.



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LightWave
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PRICE

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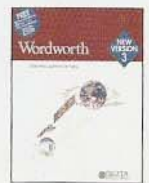
PRO DRAW V3
\$149



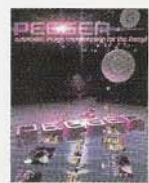
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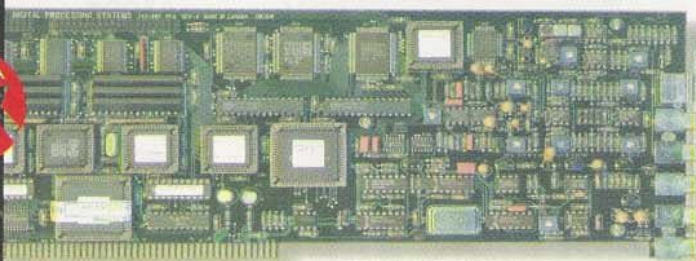
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EASY TIME LINE EDITING

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FILE FORMAT EX PACK: These EX's allow exchanging picture and animation files with platforms like IBM PC® & Machintosh®. Imported files can be converted from and to IFF modes. Formats supported are: BMP, PCX, GIF, TIFF, YUVN, FLI, FLC & Datatypes.

VCR EX PACK: These EX's allow control of RS-232 capable VCR's.

MD100: This card and EX pack allows playback of MPEG video from your AMIGA hard-drive or MPEG capable CD-ROM drive. IFF files can be encoded into MPEG via Anim-Lab. VideoCD and CDI supported.

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Features



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24 bit painting without extra hardware - power to the people!

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When in trouble or in doubt, run in circles, scream and shout. Or read this. Your choice.



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Professional Accounting



Cover created by Jarrod Pudsey
Thanks Unitech for fixing my machine
Image: 1500 x 3000
Program: Lightwave
Machine: A4000/040/40MHz

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The year that was

December 1993 - Although a little shaken from the financial results of Commodore's previous year, the Amiga community was quietly excited. CD32 was new, with the promise of docking stations, an add on Full Motion Video card and mind-blowing interactive CD titles. Demos showing us 2D dinosaurs morphing into full 3D texture mapped giants made the CD32 look well equipped to blow anything Sega or Nintendo could offer into the junk yard. Commodore, it seemed to the casual observer, was moving in the right direction.

But it wasn't enough. By May, Commodore was in liquidation. Since then we've all waited patiently for the fabled winning bidder to march into town and announce that all is well.

While we waited, the promised docking stations arrived, Opal Technology went into a loop, Wordworth and Final Writer shipped impressive updates, Workbench 3.1 arrived and Pagestream kicked off the largest number of upgrades in the shortest space of time in the history of software publishing. Not bad, considering some pundits said the Amiga was dead two years ago. Looking around our office, you'd never know. We have all types of PCs here, and we all unanimously agree the Amiga is still the best machine to use.

A few weeks back I checked out Windows 95. I am happy to report that although it looks like Microsoft have finally cracked the multitasking demands of modern day computing, the interface remains poor. Icons are still unconnected to the actual files. The Program Manager is bigger and better, as is the File Manager, but they're both still clumsy. The luxury of the Amiga's multiples screens, snappy feel and easy

to manage desktop is still lacking.

So where do we stand?

We produce Amiga and PC Review using Amigas running Professional Page 4.1. We use a 1200 to handle our accounts, using EasyLedgers. But we use PCs running ACT for contact management. ACT is an excellent program, but you can only get it for Windows. PC-Task 3.0 runs Windows and is billed to work quite fast as long as you've got a hootingly fast Amiga, so it's possible we could ditch the PCs and run everything on one platform.

The final catch still remains - who will buy the Amiga technology? The liquidator set a deadline of November 4 to settle things with Commodore UK, but that deadline came and went. Right now CEI and Commodore UK are heading for a bidding war that probably won't be resolved for another month.

Details are sketchy, but my best guess is that both parties are hoping the other will lay their bid on the table first so they see what it is they're up against. Just as the creditors want as much as possible for the Amiga technology, the buyers don't want to make a crazy bid. Unfortunately, the longer each waits, the better chance the other has of suddenly snapping the whole deal up. Indicators from the liquidator tend toward seeing the situation finalised by mid-December. That could involve an all-in boardroom showdown with all the bidders present. It should make interesting reading in a book about the Amiga in years to come!

Regular readers will note that there's no Hot PD column this month. This is because Daniel Rutter was struck by a 600 pound falling haddock. He will have recovered in time for next month.



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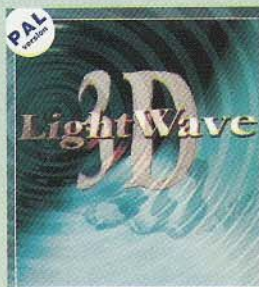
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Brilliance Version 2

The Changes!

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E & O E

Photogenics

Almathera have announced a new professional paint package for AGA Amigas. Photogenics can do simple image format conversion, but it's also got a lot of powerful paint tools - chalk, pencil, pastel, airbrush and so on. Photogenics doesn't require a 24 bit graphics card, though it

produces 24 bit output it uses HAM-8 mode instead. This saves money and looks nearly as good as 24 bit, but it's a lot slower than using extra hardware.

For more information, contact Don Quixote on (076) 391 578. RRP \$130.



An example of an image converted to a fresco painting



Multiple windows open in Photogenics



'Paint-on' effects in Photogenics



A simple still life drawn in Photogenics using the real painting tools

Wordworth 3.1

Wordworth 3.1 should now be shipping to dealers. The most important changes from v3.0B are landscape printing, EPS graphic support and greatly increased speed. Very cheap upgrades will be

available to Wordworth 3.0B users, if they return all the original program disks.

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11. The number of people who believe it will ship on time.
10. The number of floppies it will ship on.
9. The percentage of people who will have to upgrade their hardware.
8. The number of megabytes of hard disk space required.
7. The number of pages in the Easy Install version of the manual.
6. The percentage of existing Windows programs that won't run on the new OS.
5. The number of minutes to install.
4. The number of calls to tech support before you can get it to run.
3. The number of people who will actually PAY for the upgrade.
2. The number of megahertz required for it to run faster than a Trabant.

And now, the number one thing people think the 95 in Windows 95 really stands for... (drum roll)

1. The year it was DUE to ship!

Stylus colour driver

► The Epson Stylus colour ink jet printer is billed as operating at a resolution of 720 dots per inch and certainly produces more impressive output than any of its competitors.

But the Amiga didn't have a printer driver that supported the full 720dpi mode - until now. GSoft are now stocking an updated version of the Epson Print Studio package, which supports the high resolution mode and also does shingle printing to output large pictures on many sheets of paper, with many other features.

For more information, contact GSoft on (08) 284 1266.

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► Datastore is a \$149 database program which works on any Amiga with Workbench 2 or higher and 1Mb of RAM. Datastore features unlimited numbers of records, custom reports and data exchange with Wordworth and other products.

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Media Watch Spottings

ABC and SBS spottings

Lube Saveski, of Dianella, WA, spotted a few Amigas. There was an A3000 on one of the ABC's Microdocs, during a documentary on Cybernet. There's a Commodore monitor in the video clip for the recent track "Lucas with the lid off", and Lube also spotted a few Amigas on SBS's The Big Byte, during pieces on an art gallery BBS and on disc jockeys and visual effects.

Various hopeful sightings

Joshua Pryor, of Belmont NSW, spotted a number of Amigas. On a program on the ABC called "The Space Age" which he said was hosted by Captain Picard (we hate to tell you this Josh, but Patrick Stewart's just an ACTOR. Star Trek IS NOT REAL), he saw a professor using a 2000 with what looked like a 1084 monitor. Also, in an AV Jennings ad, a 3000 was being used to generate pictures of buildings.

At the Civic Theatre in Newcastle, he saw two A4000s being used to control various lighting effects and sound mixing. In an admitted subscription-scoring attempt he also mentioned that Teralba Primary school has eight 500s and on 2000, and that Glendale Technology High, which he attends, has two A500s in the art department, running DPaint III.

He then tried some more you're wonderful and I love you stuff to suck a sub out of us, but he failed, because the competition, see below, was too stiff. But we will answer his question - yes, a flickerfixed 2000 can use a regular VGA monitor, since all the flicker fixer puts out is 31.5kHz no matter what the screen-mode.

Line It Up With A Pole To See If It Moves Department

On the 28th of October at the "Making More Waves" exhibition at the University of Adelaide (an exhibition showcasing upcoming, talented mechanical engineers), I spotted a 3D raytraced animation showing the assembly process of the front panel of a Simpson tumble dryer, run entirely on an Amiga.

I know this because I did it; 33 frames, each one individually rendered with Sculpt Animate 4D v2 (!) [Ed: this is a Really Old Render, folks], then assembled into a HAM animation with DPaint 4, using an UNACCELERATED A500! On average, each frame took about two hours to render, plus an extra few minutes per frame to remap the colours.

If I can't get a subscription for the spotting, can I at least have one for stupidity?

Darren Foster, Seaview Downs SA

Ed: Yes.

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Brilliance 2.0

24 bit painting for the rest of us

By Patrick Kirsch

► Brilliance! You get the feeling that Digital Creations has a pretty high opinion of their product. But is it justified?

Brilliance is a paint and animation program for Amigas without fancy graphics boards. Its only other genuine rival in this category is Electronic Arts' Deluxe Paint IV.

If you're trying to decide between Brilliance and DPaint, your specific needs and machine configuration will be the determining factors.

Brilliance is in fact two programs, Brilliance and True Brilliance. The former is described as "register based", meaning it uses a palette of 2 to 256 colours from a possible 4096 or 16.7 million, depending on whether you've got an ECS or AGA machine.

Brilliance's paint functions are similar enough to DPaint to make no real difference.

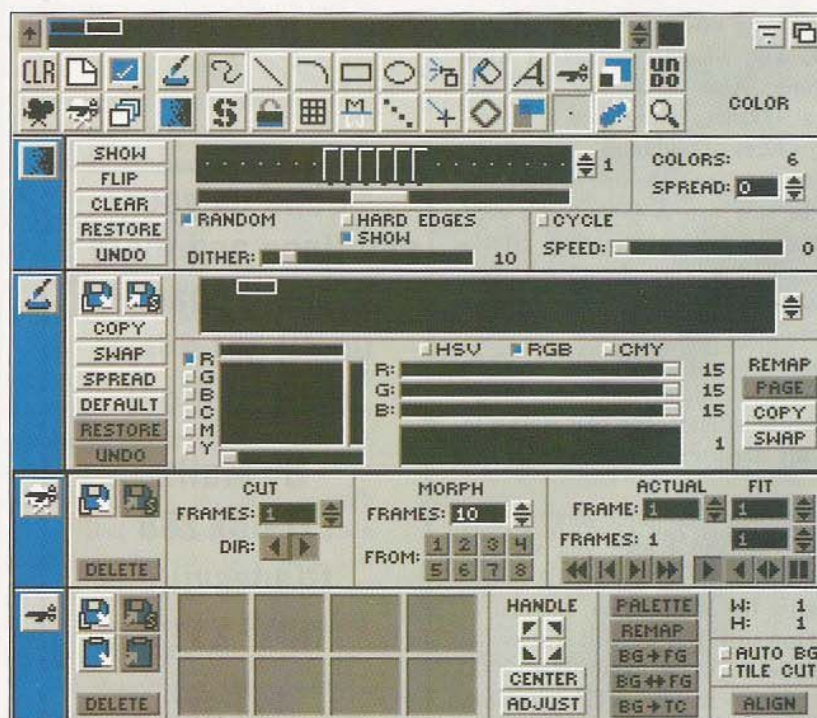
Its interface however is significantly different. Menus appear at the bottom of the screen and are stackable, much like professional paintbox systems.

They can be toggled on and off with the space bar, and combina-

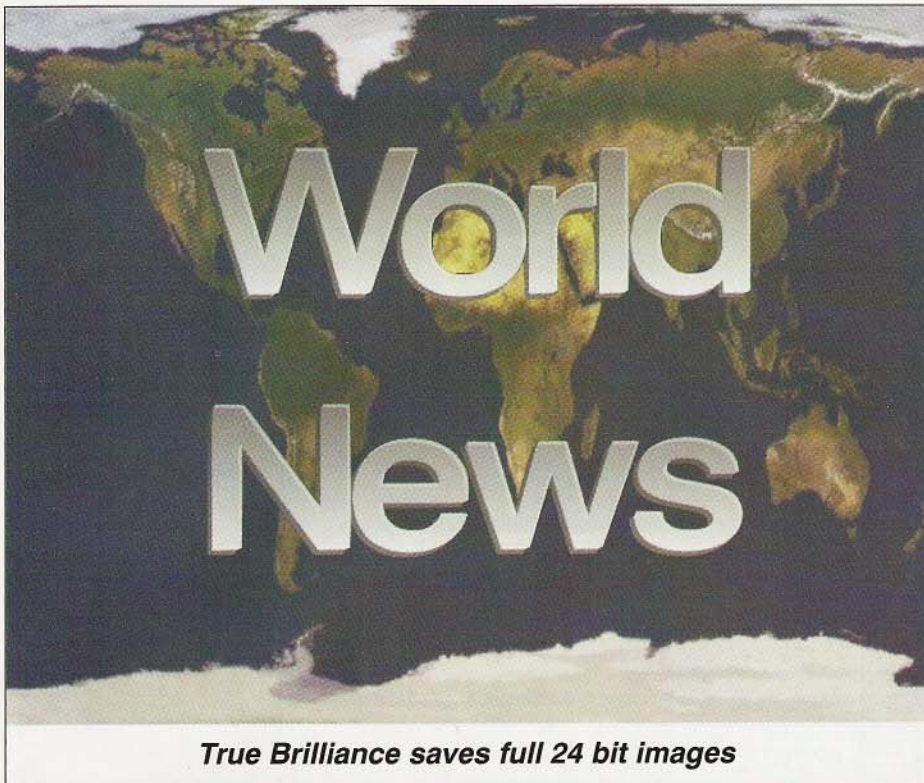
tions of menus can be allocated to hot keys on the numeric keypad. The effect of this, combined with multiple undo/redo, is a significant improvement in working speed. Score one for Brilliance.

True Brilliance is "true colour" based, able to maintain the image data as true 24 bit independent of your machine's chipset.

In practice, however, the painting operations themselves are



Brilliance has stackable menus, like the big boys



limited to HAM6 (4096 colours) or HAM8 (262,144 colours).

In the case of HAM8, this is no problem. For example, a gradient spread can have up to 30,000 intermediate colours (smooth enough for you?). Antialiasing, smoothing and transparency all work in 24 bit, begging comparison more to Opalpaint than Deluxe Paint.

On the other hand, HAM6 can only support a gradient of 4096 colours.

Worse still, its maximum viewable screen size on ECS machines is 368 x 566 (video overscan), meaning that full resolution 24 bit pictures (736 x 566) overrun the edges of the screen, requiring scrolling, their aspect ratio is distorted and paint operations do not have effect beyond the edge of the viewable screen.

One test I performed was to matte a 24 bit text brush (created with Montage24) over a 24 bit picture with antialiasing. I did the same with Opalpaint and DPaint.

The True Brilliance (saved as 24 bit) and Opalpaint versions were indistinguishable when viewed on Opalvision. Deluxe Paint crashed when I tried to load a 24 bit picture as a brush.

Eventually I succeeded in loading the text picture into the swap page and cutting it out as a brush, which then required palette remapping which resulted in an obvious stepped gradient on the text.

DPaint could only save the image as HAM8, thus further reducing the quality of the original image. Score another one for Brilliance.

Animation

Again, there are many similarities between DPaint and Brilliance, but an obvious difference appears in cel and brush animation.

Cel animation on a computer is a contentious thing. Most animators will tell you they would not

True Brilliance gives you full 24 bit animation on a stock Amiga.

dream of hand drawing cels on a computer, but rather draw them on paper, scan them into the machine, and then perform ink and paint and special effects.

If, however, you're game enough to try it (and I haven't met anyone yet who is), DPaint offers the better environment thanks to its "Lightbox" effect, where one or two previous cels are partially visible on the current cel.

In reply to this, Brilliance has added a "flipbook" feature in version 2.0.

This simulates the cel artist's technique of holding several cels and flipping them backwards and forwards to get a feel for the motion of the character they are drawing.

It does this by playing the last five frames of the animation back and forth at the touch of a hot key. Nice idea. Combined with a lightbox effect you might have a workable cel animation system, but DPaint wins this round.

Much more suited to a computer platform is brush animation, where a cutout brush is moved across a fixed background, rotated in perspective, squashed and stretched. Again, both DPaint and Brilliance offer much the same functions.

Both support anim brushes, and can create anim brushes by morphing between two different bushes. It is the control of the

brush that sets the two apart.

What DPaint calls the "Move" menu, Brilliance more appropriately calls the "Tweening" menu.

It gives you start and end positions and rotations for your brush, rather than just an increment value for each.

It allows you to set the number of frames for the movement you wish to perform, as well as the start and end frames of the tween.

But best of all, hit the "Adjust" gadget and you are presented with a screen with a "wireframe" of your brush which you can drag to its start position and rotation, then click "end" and drag to its end position and rotation.

You can also visually adjust the origin point and the lens focal length, which will affect how perspective works with rotations in the Z axis. When you're done, hit "Use", and you can preview the tween, readjust it if necessary, then draw it. It is much faster and more intuitive than DPaint's "Move" menu.

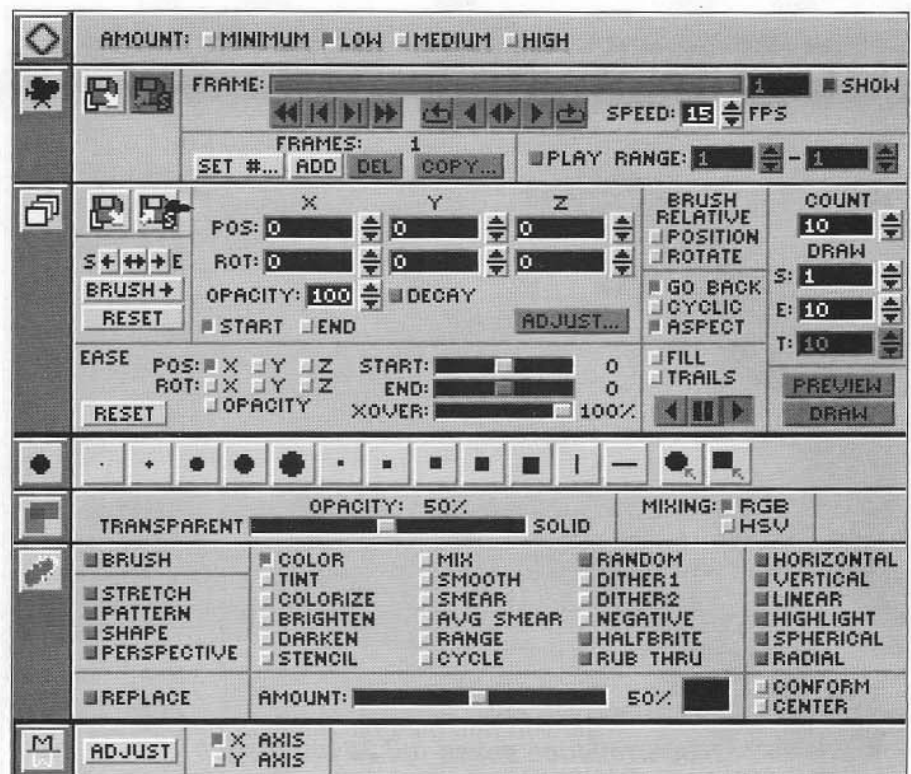
So DPaint and Brilliance seem pretty evenly poised coming into the final round, but Brilliance has the tie breaking point.

As a consequence of True Brilliance's 24 bit buffer, and its superior brush animation system, it offers something that not even Opal-paint can: 24 bit brush animation. 24 bit backgrounds and brushes can be loaded and animated, just like the big boys do with big bucks paintboxes.

You will of course need staggering amounts of RAM to do this, or you could use a good virtual memory system (should have been included in the program).

Don't expect to play these animations back in real time; these are for single frame recording or PARing.

Sounds great, huh. So why oh why did Brilliance's writers not



provide the facility to save the animation as single 24 bit IFF frames, rather than just HAM8?

If you want a 24 bit save, you have to move through the animation one frame at a time, saving the frames through the picture save menu rather than the anim save menu, manually incrementing the numbers in the file name, and there is no AREXX interface with which to automate the process.

Once again I beat my head against the wall because of the lack of foresight on the part of software designers.

Why do they all assume users want to take the best quality images and degrade them to low res HAM6 in order to play them back at 6 frames per second on a vanilla A500?

Why put the word "Professional" on the outside of the box if you're not going to provide professional features? Am I ranting? It's been a long week.

So Brilliance is pretty darn good - for certain things. If you are more confused now than you were at the start, let me try to simplify things.

If you own an AGA machine, keep DPaint and buy Brilliance as well.

If you own an ECS machine buy DPaint, then buy an AGA machine and Brilliance.

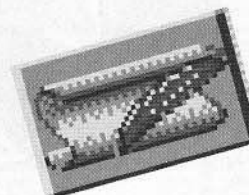
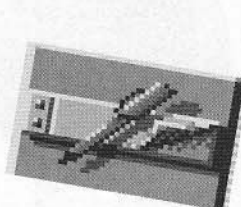
And finally a quick word on the differences between Brilliance Version 1.0 and 2.0. Very little. Version 2.0 comes with 1.0's manual and a 15 page addendum. The main improvements are, firstly: no dongle (smart move guys), and secondly: a much better price.

With a street price of only around \$100, Brilliance is a graphics tool everyone should have.

□

Simple home accounts *with Money Matters*

By Owen James



Unless you're in business, using a computerised accounts system may seem like overkill. After all, EFTPOS, Bankcard and telephone banking is supposed to make our lives so much easier, right? The truth is that unless you have an adequate system for maintaining records of income, expenses and transactions, the user-friendly, super-convenient nineties will make your financial life a misery.

At its most basic level, Money Matters is designed to record details of banking transactions and present you with an up-to-date balance at every point. A five dollar analysis book from the newsagent could just as ably do this job, but Money Matters goes much further. Money Matters can also handle your budget, direct credits and debits, financial reports, charting and forecasting.

Money Matters isn't exactly a new program. It has existed in previous incarnations as Home Accounts and Home Accounts II. Those of you familiar with its predecessors will at once feel familiar with Digita's Human Interface Protocol (HIP). While the manual makes no mention of the improvements Money Matters has over Home Accounts II, there are enough to make the update worthwhile.

Setting Up

Money Matters will run on any model Amiga with Workbench 2 or 3 and at least one megabyte of RAM. A hard drive is not required, but the number of transactions will be more limited on a floppy-based system. Money Matters is supplied on a single disk and may be run from floppy or installed to a hard drive via Commodore's excellent Installer program. After a small amount of disk grinding, and a once-only request for your name and registration number, you're ready to run.

Upon opening you'll find a screen not unlike Workbench. There are various icons and a trashcan which help make up Digita's HIP, which is based on the familiar concept of the desktop. Gold Disk used this style of interface well in their own Desktop Budget software. The first task is to add a series of accounts. Depending on your circumstances, you may have separate accounts for savings, credit card, and cash. These "accounts" do not have to correspond to a physical bank account. The cash account, for example, can be a simple home petty cash system.

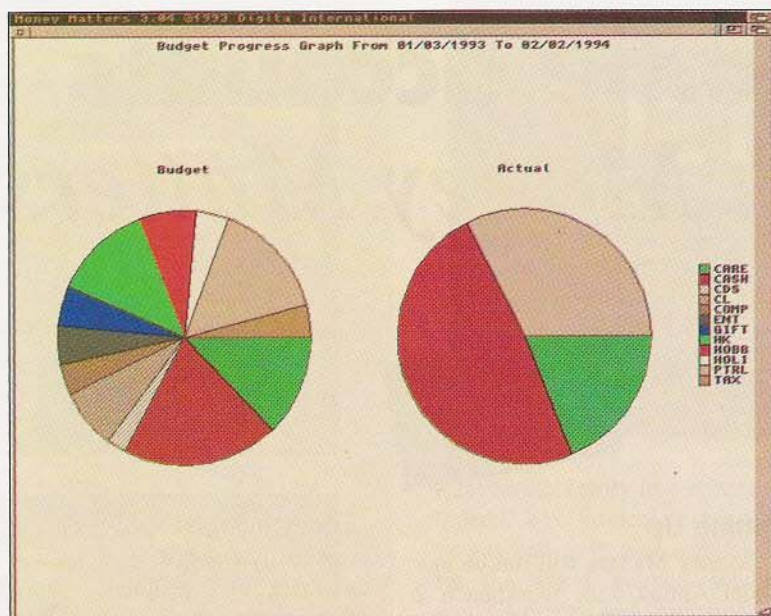
At this point you also tell Money Matters about any regular activities to expect with this account. For example, you may have

monthly mortgage repayments automatically debited, or your wage automatically credited. Money Matters can then assume these transactions have taken place in the future without interaction from the user. Of course, automatic transactions may be overridden or changed at any stage.

A budget can also be defined, and in future directly compared with actual transactions. Each month can have a varied budgeted value, allowing you to take into account an expected Christmas bonus, or even a mid-year holiday. With a little planning, young Hubert won't have to give up trombone lessons after all. Lucky Mum and Dad. The "What if?" command may be used to make financial projections well into the future. Simply enter the date to project to and Money Matters will, based on the data you've given it, calculate known income and expenses, warning of any potential problems.

Interface

Digita's Human Interface Protocol (HIP) is more than just a cute acronym. This is one area in which Money Matters leads other accounting software, including System 3 and EasyLedgers. If you've gone part way into a transaction and realise you've forgotten an ob-



secure account number or transaction type, you're not forced to close the transaction, look up the number, and start again. Neither are you forced to use a slow and cumbersome pick list each time to enter data. The pick list is there in front of you at the press of a key, but if you're experienced and can fill in details without prompting, you're equally well catered for.

You can also attach notes to several types of transactions. The simple line editor leaves much to be desired, but this is one shortcoming I can live with. There's on-line help for most functions, which provides enough information to keep an experienced user out of trouble. Reports may be generated at the click of a mouse button. You can define the report formats, but the most useful reports look similar to your bank statement and are used in reconciling accounts.

In addition to this, graphs can also be generated to allow you to visualise your impending debts in vivid colour. Thanks to AGA support, there can now be 256 degrees of "in the red". Thanks Digita. A variety of charting options are

available, including line and scatter graphs, pie charts, bar and 3D bar graphs, among others.

The Money Matters manual is excellent. At close to 200 pages, it provides enough information and examples to fully understand the program without becoming too bogged down with heavy terminology and theory.

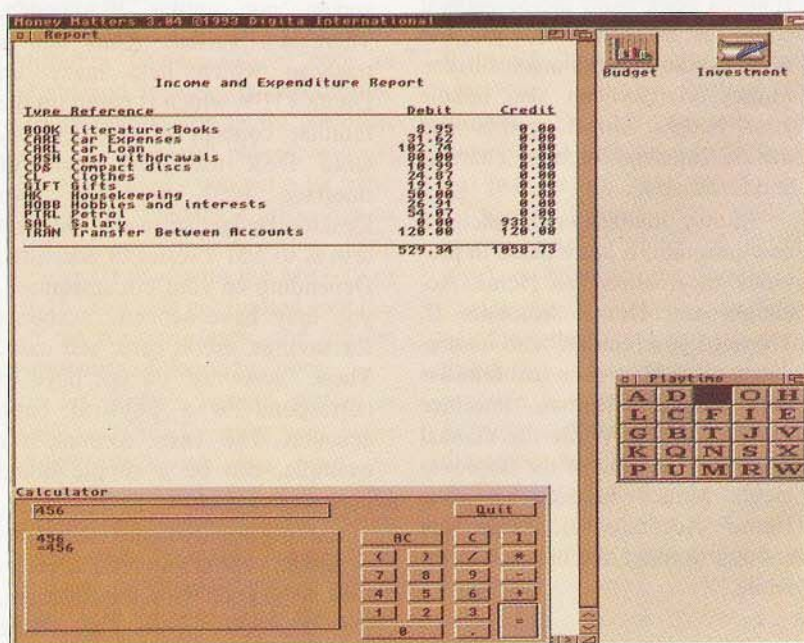
Also included is a chapter devoted to general guidelines for bet-

ter managing your finances. These don't refer specifically to Money Matters (for example, why it's a bad idea to overstate your income when applying for credit), but are a welcome addition for general users. It's got a UK slant, but much of the information in this chapter is general enough to be relevant to Australians.

Overall

Money Matters is an excellent program for managing your home accounts. It won't require a degree in accounting to make sense of it, yet it's powerful enough to genuinely do some good in maintaining your home budget and presenting information to your accountant. Although billed as a package suitable for small business, there are better packages for this task, including the soon to be released EasyLedgers 2. As a small business owner, I would prefer to have a package that can handle stock control, invoicing and more extensive reporting, including a balance sheet. But what Money Matters does, it does well. At \$129, it's a worthwhile investment.

□



A Complete guide to *Disaster Recovery*

By Daniel Rutter

► Computers can store an awful lot of data and manipulate it awfully fast. This also means they're eminently capable of throwing data away very quickly, with or without assistance from their operator. When this happens to you, and the operative word here is when, it pays to know what to do, and what not to. That's what this article is about - recovering from disasters, and also avoiding them in the first place.

Accidental Deletion

How do disasters happen? There are infinite possibilities for data loss, but common failures fall into a few categories. First, there's the simple accidental deletion.

When you delete a file, it doesn't immediately get obliterated. Instead, AmigaDOS just changes the file header, the first piece of data read by the system when it looks at the file, to say that the area's free and may be written to. The file name is intact, as is all the data and its directory location; it's just been made invisible to standard DOS operations and the space it occupies may now be used by anything else. This means that if you delete a file, and want it back, you can always get it back perfectly as long as nothing's written over the disk space it used. So, if you delete something by



mistake, be sure to save nothing more to that drive or hard disk partition until you get the lost file back.

There are lots of programs which can handle basic undeleting; I'll get to them later. The simplest way to do undeleting is to use Kan, from Fred Fish's AmigaLib-Disk 694. Kan patches the DOS delete function so that when you tell the system to delete a file, it looks at the device it's deleting from and sees if there's a directory there called Kan. If there is, the file gets moved there, instead of deleted.

Every time you boot the computer, an extra giblet in your startup checks if midnight's rolled around since you last booted; if so, everything in a kan directory gets properly deleted, unless the device it's on also has a Kan2 directory, in which case it gets moved on to

there. You can make as many Kan directories as you like - Kan directories up to Kan7 give you a one week grace period for all deleted files, during which you can recover them as easily as copying them from the Kan directory.

The disadvantage of Kan is that you don't get disk space back when you delete files until they're genuinely deleted. You can turn Kan off, of course, but if you're short on disk space you'll find yourself doing it all the time. Kan also encourages disk fragmentation, for much the same reason. Those niggles aside, though, Kan is a simple system that works well. I use it.

Damaged Files

Another common source of data loss is interrupted writes. While your Amiga's READING from a device, you can safely

reboot or turn off the power. But if the computer's WRITING to a device, it needs to finish the write and update the disk's file structure before you can power down.

If you reboot or turn off or the system hangs before a write's complete, you'll end up with an unvalidated disk - the disk operating system's index of where things are doesn't line up with where they really are. Also, the file you were writing will be pretty much kaput. This doesn't mean you can't get back any of its contents, though - I'll get to that later, too.

Your floppy or hard disk activity light simply indicates data's going to OR from a disk - you can't tell if it's reading or writing unless you're familiar with the operation in progress. Basically, don't reboot or turn off with a drive light on.

If you do get an unvalidated disk, and you're using a version of Workbench before 2.0, you'll have to fix the problem with a disk repair program (see below). If, however, you're using Workbench 2 or higher, the operating system will revalidate the drive for you.

When you reboot, that drive will thrash like crazy as it pushes all the worms back into the can, and will eventually be right as rain, missing only the file it was writing to when the sky fell. If you boot your computer and it seems to take an inordinately long time to do anything, with frantic activity on one or more drives, this is what it's doing.

If you reboot again, you'll just mess up whatever file it was revalidating at the time and it'll start revalidating again. So when your computer's revalidating, leave it alone. A big hard drive can take quite a while to piece itself back together; go have a snack, or something.

File Name Clobbering

Another way to kill a file - and a very effective one, at that - is to overwrite it with another file of the same name. You see, AmigaDOS can't tell the difference between a simple updating save, such as you do all the time when progressively building a document, picture or whatever, and an accidental overwrite of bear.txt, a treatise on the people's right to bear arms, with bear.txt, your three year old's ode to Teddy.

Run a recovery program and it won't find the old version of bear.txt; it's not possible for the operating system to see what used to be in a live, undamaged file.

In some cases, you can get around this. Some programs, for example ASDG's CygnusEd, do "safe saves". They save the file temporarily under a dummy name (in CED's case, "CygnusEdTempA.xxx"), and then delete the original file, and then rename the dummy file to the name of the original. This means that if the system dies while they're saving, you'll probably either have the older version of the file and a corrupt version of the temporary file, or no original file and the temp file with the silly name.

There's also a chance that the death occurred during the renaming, though, which can mess the disk up quite badly. The renaming takes less time than the saving (though probably a lot less, unless the file's very small), so overall it's a good deal.

Deadly Don'ts

Do NOT work without backups, whether you're using a floppy or hard disk based machine. If you make backups regularly, the worst case scenario is losing the work you've done since the last backup, not losing the lot.

Absolutely positively NEVER

under ANY circumstances optimise a drive without backing up first. Optimisers, if something goes wrong, can Mess You Up Bad.

This is because optimisers, in order to work their disk-speeding magic, keep the data they're working with in RAM, and do all sorts of shoveling around to the drive while they work.

Imagine a juggler (the optimiser) with a stack of plates (the drive). Each plate's got a number on it, and they're out of order - but the owner of the kitchen (the operating system; bear with me here) has a list that says which plate is which. There's some really good reason why the kitchen owner has to know this. Shut up.

The juggler reorganises the plates by yanking out a few at a time, juggling them, and catching them and putting them back on the pile in the right order. After enough yanks and juggles, the stack is organised, and the juggler writes out a new list saying where all the plates are and hands it to the kitchen owner.

But if the juggler loses interest in the middle of the performance and wanders off to stare at a flashing red box on a computer screen, a number of plates will crash irrevocably to the floor and the kitchen owner's old list of plate locations will be wrong.

A simple optimiser with a small RAM buffer juggles only a few plates at a time. For maximum security, it can even update the plate list as it goes, giving the owner a new list every time it sorts some plates. But juggling plates in twos and hurling reams of paper at the owner is the slow way to do it.

This slow way is the one used by a number of MS-DOS optimisers, hamstrung by the antique operating system they're stuck with which requires the disk's File Allocation Table be

updated immediately whenever anyone does anything at all.

Faster optimisers save the list update till the end, and juggle more plates. The optimisers in Quarterback Tools and Amiback Tools behave like this; if the computer dies in the middle of an optimise you will lose a lot of data, but not all of it. Then there's ReOrg, a shareware optimiser you can find on Fish 716 whose act involves turning the air white with plates. Turn off without a backup and you might as well reformat the drive (although you CAN get data back... see below, if you're brave).

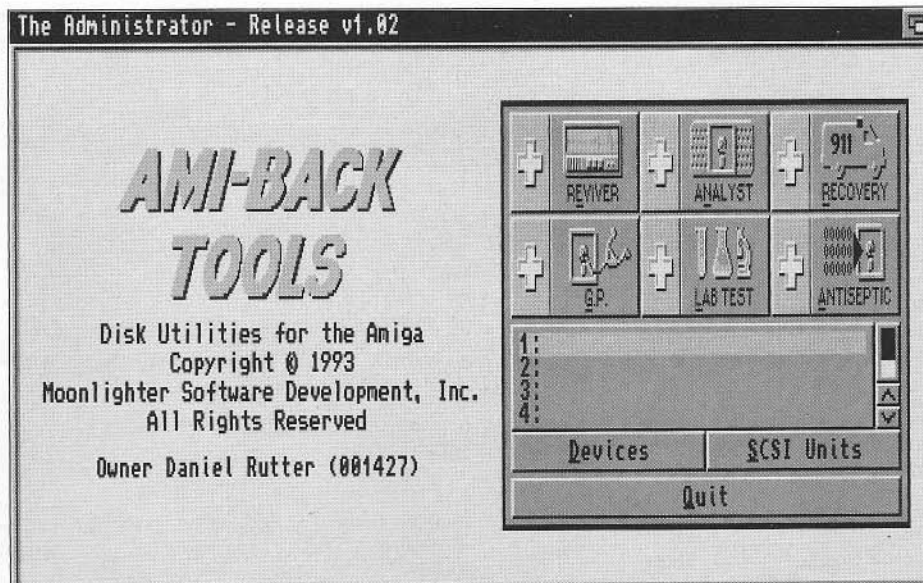
Which Software?

Do not use Commodore's old Diskdoctor program. If you have it (it hasn't come with Workbench since version 2 came out), delete it, and ignore those stupid requesters that say you should use it.

The problem with Diskdoctor is that it reads from the disk, then writes anything it finds back, which means a disk that is physically damaged may not be helped at all. It will salvage deleted files, but Diskdoctor's woefully inadequate when it comes to recovering damaged data.

You can use Diskdoctor safely for simple undeleting, but don't. There are better programs out there. One, imaginatively titled Undelete, is on Fish 795. It works like the DOS delete command in reverse - simply type undelete and the filename from a shell and after a bit of disk thrashing you'll get the file back, unless something's overwritten it.

A more elegant program is ARestore, on Fish 760, which has a nice interface and lists all the files you can undelete for easy selection. All full salvage programs can also do undeleting. Fish 891 contains DiskSalv 2, a shareware salvage program that costs only \$US10 to register and is as



Ami-back Tools - friendly disk manipulation

powerful a file recovery program as most people need - although all it does is recover files; it doesn't optimise, copy, wordprocess or do 3D rendering.

In the commercial arena, Amiback Tools and QuarterBack Tools are the ones to go for. Amiback Tools is just one lump, Quarterback Tools comes with a pile of little extras. Both do undeleting, optimisation and file recovery; both can blank disks if you're paranoid about people undeleting things you'd rather they didn't.

Quarterback can also encrypt floppies and do some other non-relevant things. Quarterback seems to be the more powerful of the pair, but this is hard to ascertain. To do a proper test, both programs would have to face exactly the same problem, and since it's since it's nigh impossible to get two really stuffed up drives exactly the same, that test will have to wait. Both Tools programs are very good.

Recovering tiny bits

So far, I've dealt with more

everyday disaster recovery. But what if the above methods aren't good enough? What if we're talking not a car bomb, more of a nuclear holocaust?

Well, in many cases you can get back some of a file even if it's been saved over or mangled too badly for traditional recovery. If it's a program file and you can't get back all of it, forget it; erect a tombstone and move on. Likewise for pictures (unless you're a SERIOUS guru and a lot of other data formats that work in an all-or-nothing sort of way. But, if it's a text file, you've got a hope.

A text file that's been saved a few times will have many fragments of its previous selves lurking on the disk. They're all labelled as empty space, but they're there and can be read. DOS can't do this, and neither can regular recovery programs, but a couple of specialised tools can.

My favourites for these sorts of really ugly jobs are DekSid (Fish 441) and TrackDOS (Fish 620). DekSid is a disk and file sector editor - you can load files or whole



Deksid v1.11 (c) 1990 Christian Warren									
Blk 822293	/	041579	Trk 00058	Sec 45	Head 6	S-Ascii	Type	File Header	
822294	822293	Device 1:	IntuiDump	Continue		S-Hexa	Header Blk	021915	
822292	822291	Pos 000	Hex 00	Dec 000	Bin 00000000	Write	Next Blk	021916	
							Seqnum	000053	
							Checksum	G 13CA052A	
00000002	0000559B	00000035	00000000	0000559C	13CA052A	00000000	00000000	.....Uv...5.....Uv.E.x.....	
00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	.....
00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	.....
00000000	00005500	000055CF	000055CE	000055CD	000055CC	000055CB	000055CA	.....Uv.Uv.Uv.Uv.Uv.Uv.Uv.Uv	
000055C9	000055C8	000055C7	000055C6	000055C5	000055C4	000055C3	000055C2	.....Uv.Uv.Uv.Uv.Uv.Uv.Uv.Uv	
000055C1	000055C0	000055BF	000055BE	000055BD	000055BC	000055BB	000055BA	.....Uv.Uv.Uv.Uv.Uv.Uv.Uv.Uv	
000055B9	000055B8	000055B7	000055B6	000055B5	000055B4	000055B3	000055B2	.....Uv.Uv.Uv.Uv.Uv.Uv.Uv.Uv	
000055B1	000055B0	000055AF	000055AE	000055AD	000055AC	000055AB	000055AA	.....Uv.Uv.Uv.Uv.Uv.Uv.Uv.Uv	
000055A9	000055A8	000055A7	000055A6	000055A5	000055A4	000055A3	000055A2	.....Uv.Uv.Uv.Uv.Uv.Uv.Uv.Uv	
000055A1	000055A0	0000559F	0000559E	0000559D	0000559C	00000000	00000000	.....Uv.Uv.Uv.Uv.Uv.Uv.Uv.Uv	
00000010	000068FC	00000000	00000000	00000000	00000000	00000000	00000000	.....hü.....	
00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	.....
00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	.....
00000000	000016C7	00000397	00000308	09496E74	75694475	6D700000	00000000	.....C.v.....IntuiDump.....	
00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	.....
00000000	00000000	00000000	00000000	00000000	0000515F	00000000	FFFFFFFF	.....Q.....uuuq.....	

Deksid - about as low level as it gets

disk devices into DekSid and view them as hex and ASCII, doing search and replace operations and freeform editing.

Deksid thus lets you modify DOS and non-DOS disks in any way you like; doing this at random gives you about one chance in a squillion of not mucking up the disk.

But that's not why we're interested in DekSid here. You see, once you've loaded a device into DekSid and you know the above-mentioned text file on American constitutional rights is in there somewhere, you can do a search for, say, AK-47, a word you know is in it. Assuming the word has survived, you'll be able to jump to any disk block that contains it. The advantage of DekSid now is that it can track block links. In an intact file, there's a header block that tells the system what the file is, and then there are a lot of data blocks that contain the actual information. So that the system knows where to look for the next data block, each one contains a pointer to the next, whether it's immediately after the

current block or somewhere else.

A dead file has almost always lost its header block, but the block links may be intact. If they are, DekSid can tell you where they point and you can follow the chain by hand, saving as you go. Clumsy, but not nearly as clumsy as the last line of defence - TrackDOS.

TrackDOS is more of a brute force program, and not much use by itself. It lets you interchange data between memory, disk tracks and files freely. This means you can take the contents of RAM and turn it into a file (which you can then load into the beefy text editor of your choice and hunt for any bits of your text that are still hanging around there), or read every track from a floppy and create an 880k-odd file to peruse likewise, or, less usefully, drop raw track data into RAM or turn RAM into tracks, either of which will definitely cause a whole new disaster of its own.

Fishing through TrackDOS's output is excruciating, since there's always a lot of duplication and fragmentation, but if all else

fails and you absolutely positively can't recreate the file, it's worth a try.

Mutilated Floppies

For the purposes of file operations, floppy disks behave just like hard disks, only slower. However, floppy disks aren't sealed in an airtight case like hard drives and thus are vulnerable to simple physical contamination, or mutilation. Despite the little metal door over the disk surface, floppies can still get dirt on the disk and can also be physically broken. Fortunately, there are ways to deal with these problems too.

The first thing to do in any case where the disk will still spin and has no projecting fragments is to make a copy and try salvaging from there with the software of your choice.

The second line of defence goes as follows. Slide open the metal door on the disk. Hold the edges of the disk, to stop the plastic case pinching in on the disk and stopping it from spinning. Now line up the disk surface so that a light source is reflected off the surface of the disk. Make sure you focus your eyes on the disk, not the light. Now turn the metal hub of the disk with one finger, and look for marks on the disk. They should be very easy to spot against the reflection. Remember to check both sides.

If you find a mark, look more closely. If it's a blob of something, or a smear of grease or some such, take a cotton bud, dip it in methylated spirit, and firmly wipe the offending muck off to the edge of the disk. Move the bud one way only, or you're just pushing the dirt around. If the mark on the disk refuses to move, it's a scratch and you're not going to get back whatever data's under it. Disksalv or one of the Tools programs will get back the rest of the contents.

What do you do with a smashed disk? You know - roll the ol' swivel chair back and crunch, there goes the disk! Often the cracked case on a broken disk is the extent of the damage - the floppy disk itself under the case is okay. It just can't be accessed because the case is busted.

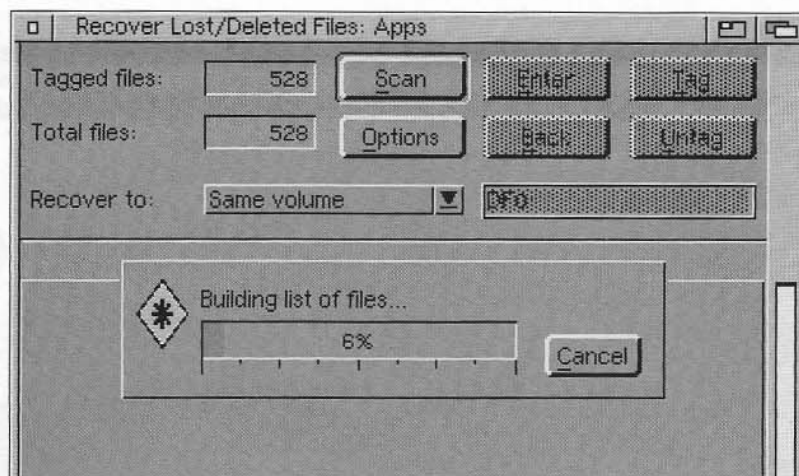
Get a fingernail under the metal door on the disk, bend it up, and zap! The return spring vanishes in a flash of silver into the corner of the room, never to be seen again. Never mind.

Stick something nonmagnetic - check your screwdrivers - into the crevice between the halves of the disk case, off to the right or left so as not to further mangle the edge of the disk where it meets the edge of the case. Twist. Ignore the splintering noises. Work your way around the case, until it falls into two pieces in your hand.

Grab the disk inside by the hub (fingerprints really don't make a lot of difference, but there's no need to complicate the issue), and lay it on something clean. Now repeat the process with a thoroughly dead disk, which nonetheless possesses an intact case. If you lack such an item, sacrifice a blank. This time, however, don't let it come completely apart - you need the connections at the bottom.

With your new, clean, shiny, beautiful case in hand, approach the offending disk and pop it in. Close the case. Don't bother with the metal door - the return spring's joined the pile in the corner, the metal's bent irrevocably, and all it does is keep dust out anyway. Now put the hybrid disk in the drive. You won't hear the usual "snick" of the door sliding back, for fairly obvious reasons, but the data may be salvageable.

As always, prevention's better than cure, and clean storage for your floppies is important - put them in boxes, and close the lids



when you're not using them. And clean your drive heads, either with one of the fibre disks supplied with overpriced bottles of carbon tetrachloride or, better, by hand with a lint-free swab. The second method is more finicky, but worth it - cleaning disks only clean the heads, and leave all the the grot in the drive right where it is. A long swab can get all the other stuff, but be gentle.

If the idea of dismembering disks sounds a little overspectacular for your problem, try just spinning the disk around. Floppies have cloth pads inside that are meant to collect dirt; see if they can solve the problem. You can try copying all the files on the disk to nowhere, or duplicating it to a spare blank, or anything that makes it rotate; there's a program back on Fish 297 called CLean that does the trick.

To accelerate the process, slide back the disk gate and add a couple of drops of methylated spirits - not enough to make the whole drive grind to a halt with an agonised whine, though. Remember to let the disk dry before reading it. It won't hurt the heads if you try to read a wet disk, but you won't get the data either, and any gunk on the heads will transfer itself to the disk.

Boom!

There are other disasters that can happen to your computer which no software will help you with - but they're not always as bad as they look. The A1200 (yes, that's what it was) in the illustration with this article went through a house fire. Looking at it, you'd say it was unrecoverable, but when its proud owner, Mark Cocquio, cracked the case open and ripped out the innards, then re-potted them into a fresh case with a new keyboard, it worked fine. Only an extremely characterful floppy eject button suggests the ordeal the machine went through.

Two SCSI hard drives plugged into the machine also survived, though their cables didn't; the NEC Multisync 2 monitor died when a fire hose hit the scalding hot picture tube, but a Commodore 1084 on the far side of the room, though badly melted and rather unhappy, powered up and produced a picture.

This anecdote exemplifies one of the most important things to do when something goes badly wrong with your computer; don't panic. Many problems aren't as bad as they seem, if you know what to do.

□

Quark Xpress vs *PageStream 3.0*

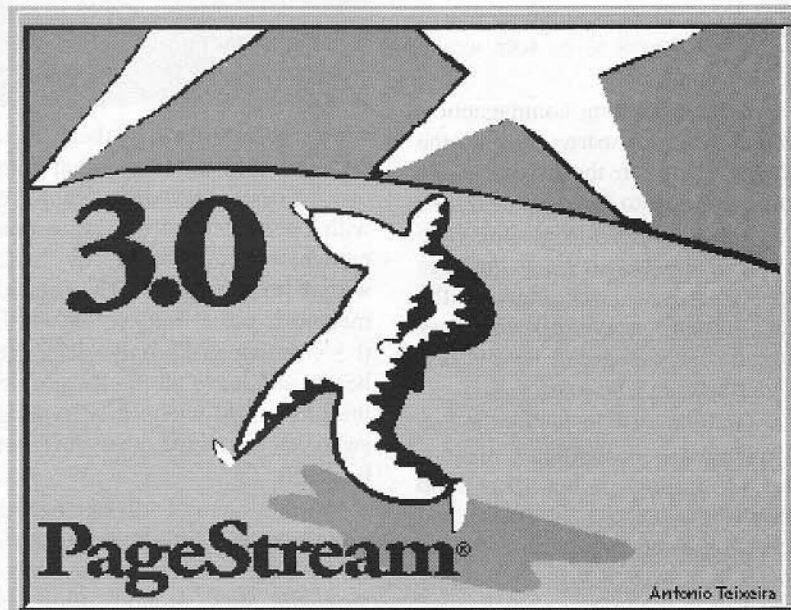
By Greg Schofield

I've been waiting for something like Pagestream 3 for more than two years. I bought Professional Page and then later Pagestream 2.2, each time hoping that I could use them professionally - no such luck.

A feature by feature comparison between the Macintosh's leading DTP package, Quark Xpress and Pagestream 3.0 is really only useful to establish that the two products are in the same league. Which is not, in the world of publishing, big news. Based on functions alone, the Amiga has professional desktop publishing software which can be favorably compared with anything on the market.

Pagestream 3.0 has certainly got extra features, but there's nothing stopping XPress having them in a future version - some of the same drawing tools have just been announced for version 3.3.

Despite Pagestream 3.0 being incomplete and unreliable at the moment, even with the "b" update, the size and rate of upgrades (two in a month), if it continues, would mean that in another 4 to 6 weeks Pagestream 3.0 should be flying. If



you are serious about publishing on the Amiga I do suggest getting it as soon as possible and learning as much as possible.

As much as I like the Amiga, I make a living (albeit a poor one) in an industry dominated by Xpress and the Mac. The fact that the quality of the output from Pagestream 3.0 promises to be equal to Xpress is not, in itself, going to have very much impact. But simply because Pagestream 3.0 runs on the Amiga, and has been implemented well with full AREXX support, it has a very real advantage over Xpress.

The future of so-called desktop publishing software isn't about final output, now that software has reached a professional standard.

The critical question is one of throughput - allowing an operator to produce more output in a given time without compromising quality. It is not, as some believe, entirely a question of faster processors and more RAM, though naturally this is important.

To increase throughput, a DTP program should aim for three objectives.

1. The operator should become oblivious to anything other than the job in hand and the available software tools. Ideally, file handling and system management should be done automatically in the background. Even naming files should be a machine initiated task.
2. Anything repetitive and

predictable should be automated where this does not add extra complexity. No piece of information about the job should need to be re-entered. Establishing the type of job and the client should be enough to start the computer assembling the various tools needed (including job records and so on).

3. Anything which by its size or complexity creates processing delays should be done unattended in the background, during breaks or on a slave machine.

"Who" magazine is an example of Xpress at its best. From what I understand, "Who" uses an extensive array of plug-ins, including specially written code which automates every aspect of its publication. The magazine is produced in the US and sent via satellite to Australia and elsewhere, where extra articles and ads are "localised". "Who" is big enough to not only afford the bits and pieces, but more importantly represent a big enough market for software companies to design modules with their needs in mind.

I wouldn't hold my breath until the right module comes along for your needs. Quark Xpress as a generalised product can only improve in one direction - it must grow bigger and bigger, make more demands on the CPU and RAM and become more and more complex to use.

Many of Quark's features I use very rarely, some I have never found a use for and others would be fine if only I could do them another way. Alas, I also confess I have lost interest in learning more, of keeping up with new versions, for the simple reason that I cannot make the software learn from my experience.

I am the passive consumer of how someone else thinks the job should be handled; I cannot train my software to fit my

environment, my clients or my workload.

On the other hand, Pagestream 3.0 was designed for the Amiga and lets me maintain the quality of final output, with a much increased throughput. Furthermore, investing in the computer by adding RAM and processing power pays off more than it would ever do in the Macintosh. The stock standard Pagestream 3.0 gives you near enough to the best in the industry, but by putting in the effort to tailor it and integrate it into a whole work environment you can get a new world.

Printing

It is a rule of the trade that when you're in the middle of a complex job some fool always wants an urgent laser proof of something else. No problem, of course, with the Macintosh's famous "background printing"; you simply stop what you're doing, open a file, go print and wait as Xpress writes the entire print file to a spooler, during which time the Mac is locked up (this is when I catch up on my reading). "Hurry up and wait" sums up working with Xpress, and printing is the break you have when you really can't afford a break.

By running two copies of Pagestream 3.0, it's possible to have an AREXX script to either load the file to print in the second copy or even invoke an autosave (which happens invisibly in the background) of the current document and have it loaded and printed by the second copy. By changing the task priority of the second copy of Pagestream you can have the whole process performed between your keystrokes.

This literally saves hours wasted by Xpress, and it'll be the first AREXX script I write when Pagestream 3.0 is completely functional.

Improving Technique

I often have to follow designs which specify a number of aligned picture boxes between two points, with a given distance between each. It's a simple enough problem (size of picture box equals the length minus the gutter space divided by the number of boxes, and so on). In Xpress I have a number of ways to do this, but they all involve calculations and precise movement. This effort is irrelevant as long as the output looks OK.

In Pagestream 3.0, there's no specific feature to do this any better, but I can create a script that allows me to draw one box (to give the length, depth and point of origin) and then enter the number of boxes and gutter and watch the task get done automatically and accurately.

Sure, Xpress may add such a feature in the future. But let's just say that, from experience, a better way to handle the problem is to roughly position and size the right number of boxes, use the extreme boxes to establish length, and thus only be requested for gutter space. In Pagestream 3.0 I either write another script or modify the old one, but Quark can only add an even more complex feature or leave it out altogether.

The point is that I have the power to mold Pagestream to my needs and impart my experience to the software, and that's the best way to increase overall throughput.

System Integration

Xpress, Photoshop and Illustrator all support DDE (Dynamic Data Exchange) publishing and so does Pagestream 3.0, with Hotlinks. I confess I have never used the system on the Mac (I couldn't afford the RAM). The idea is good, but it's generally easier to do different aspects of the

job at different times. This indifference is about to change - in fact my whole work method is going to change.

Because I can get different applications to work together and transfer information from one to the other via AREXX, and Hotlinks makes sure that the data flows to the layout, I have a lot more freedom in when and how I finish the job. For instance, bulky photograph scans be handled in ways just not possible on the Macintosh.

Let's assume a 35mm original has been scanned up to 18 megabytes (which will give you about all the detail that is available in that format), but the designer only wants a quarter of the original, and that has to be blown up to A4, and finally the printer needs to use a resolution of 200lpi.

In Photoshop I would open the file, crop it, apply at least an unsharp mask, probably reduce the contrast and increase the brightness and then scale it to size A4 x 400dpi (as a rule of thumb, scan resolution should always be at least twice that of the printer's lines per inch). Then I would have the file saved as a CMYK EPS image, and finally import into Xpress.

The whole operation, even on the fastest machine with unlimited RAM, is time consuming. And if after all this work someone decides that the cropped part should be a bit to the right, you may have to go back to the original and do it all again. If I was using Dynamic Data Exchange I would not have to do it in the same order.

On Pagestream 3.0, I could simply import and position the original. Through an AREXX script I would automatically create a scaled down version of the original, and on this do all the unmasking, contrast and brightness control until it looked

right, and have the script record the accumulated changes which it will later apply to the original, when I am doing other things.

In Pagestream 3.0, once everyone is satisfied with every aspect of the job, I have a script which reads the job lpi information, gets the cropping information and basically does the job without me. Hotlinks ensures the changes flow through, although a script needs to reinstate the new cropping in its position.

There is no way of estimating this sort of time saving. Whole aspects of such jobs can happen at night or be farmed out to other machines.

File Management

A job arrives for client X, a simple A4 size gatefold brochure (1mm shorter in length than an A4 page) in CMYK colour. It includes their logo, a number of photographs (sent for scanning) and some supplied text (IBM format). Later I will find out the printer's lpi resolution and film requirements.

On the Macintosh I create a job folder, manually name it after the job number, move the scans into it (opening each so that it can be identified, renamed, modified and so on), move the text into the folder, open each file and begin cleaning it up, dividing and renaming. Then I begin the task of searching directories for the correct logo (and this on a big system can be its own form of nightmare), then I copy it to the folder (so that it can easily be sent with the final document).

In Xpress I may have previously made a template for such a brochure. It has to be two single custom pages with fold marks and each panel arranged in imposition order (i.e. page two is fine, panel 2,3 and 4 flow naturally, but on page one the first

panel is 5 followed by 6 and then the first panel). I save this as to the appropriate job folder.

When I have finished I print out laser proofs and fax these to the client for approval and changes.

So far four programs have been used (Photoshop, Nissus WP, Illustrator and Xpress) and in each I have to manually go through each step. If I have the RAM I can have all programs up and switch between them; otherwise I organise the job to open each only once (if possible) because of the time consumed while loading, which binds the whole system. If I make a mistake in naming or placing files, more time will be lost.

If you know the Amiga and are conversant with AREXX you will realise that with a bit of work just about every aspect of the job setup could be automated.

In Pagestream 3.0 I could have different sized pages in the same document (i.e. two pages with the crucial 1mm removed), work on the panels in the logical order and have them arranged into the printer's signature automatically. The time saving would be significant and the system would also be made relatively immune to silly mistakes.

Improving Client Services

Clients are horrible people. They don't understand much and they want to change everything. Normally, all you can do is stop what you're doing and do whatever they want. But I have a plan for clients.

At each phase of a job I want the client informed that now is the time to change the text, and later is the time when the layout roughs need approval, and still later that the job is ready for their final approval. The trick is to have the machine automatically gather the right information, format it into



the appropriate forms, and fax or print out the results. Naturally, this can be automated.

Conclusion

It is impossible to fully explore Pagestream 3.0 without spending time doing real jobs. There are no doubt many bugs and much to further improve in this package. Compared to Quark Xpress, Pagestream 3.0 seems capable of producing similar results. However, Pagestream 3.0 is potentially capable of much greater throughput than Xpress; in fact Quark Xpress is not even in the race.

There is one big feature Soft-Logik could add to Pagestream - it'd be wonderful if every docu-

ment opened should be its own addressable task (it would mean that Pagestream's code would have to be "pure", which may well be impossible); although no other publishing software does this, it is critical to further increasing the potential throughput of the program without the RAM overheads of running several copies.

There are some other improvements I'd like to see in PageStream, but only one of them is in Xpress (justifying, centering and sitting text within columns). Some of the things I would like to see are a better approach to style sheets in Pageliner, the use of better pattern matching in find and replace, and the ability to export text

files with only style names embedded in the text.

In general, I am of the opinion that along with its strengths in 3D animation, games and video work, the Amiga has the potential now to make as much impact on the publishing world - a point I would stress to the new owners of Amiga technology.

It is ironic that Commodore Australia, after I had asked who in the company was watching desktop publishing, had last year advised me to buy an IBM. Good advice, fellas; no wonder you went down the tube.

□



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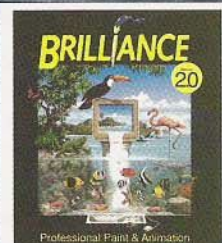


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G-LOCK

Genlock plus Video Processor

By Heiko Wynn

Video work is one of the Amiga's bread and butter applications, and a genlock is the basic requirement when graphics need to be mixed with video footage. As the Amiga puts out a standard video sync signal, genlocks for it are relatively easy to develop and produce. It therefore comes as no surprise that there are more genlocks for Amigas than for any other make of personal computer.

A wide choice of products always means fierce competition. Amiga owners are consequently in the lucky position of generally getting excellent value for their money, whether they select a low cost entry level unit or go for broadcast quality with all the bells and whistles.

Modest Looks

GVP's G-Lock is a plain black metal box with a series of sockets along its sides and no knobs or buttons. It connects between the computer's RGB output and the monitor and can be used with any 512k/Workbench 1.x equipped Amiga. The G-Lock's modest, if not boring appearance was respon-

sible for many reviewers writing it off as a serious tool for professional or even semi-professional video work when it was first released. Especially, the lack of separate fade controls for video and computer graphics seemed questionable, when other genlocks for less than half the price (the Roc-Gen+, for example) had them.

While the G-Lock has become more affordable recently, it still hasn't got any mechanical controls.

But what many tend to overlook is a much more elegant implementation of fade effects than knobs and levers - the G-Lock is fully AREXX programmable. AREXX scripts not only guarantee extremely smooth, professional looking fades, but can also handle a large number of general and expert calibrations.

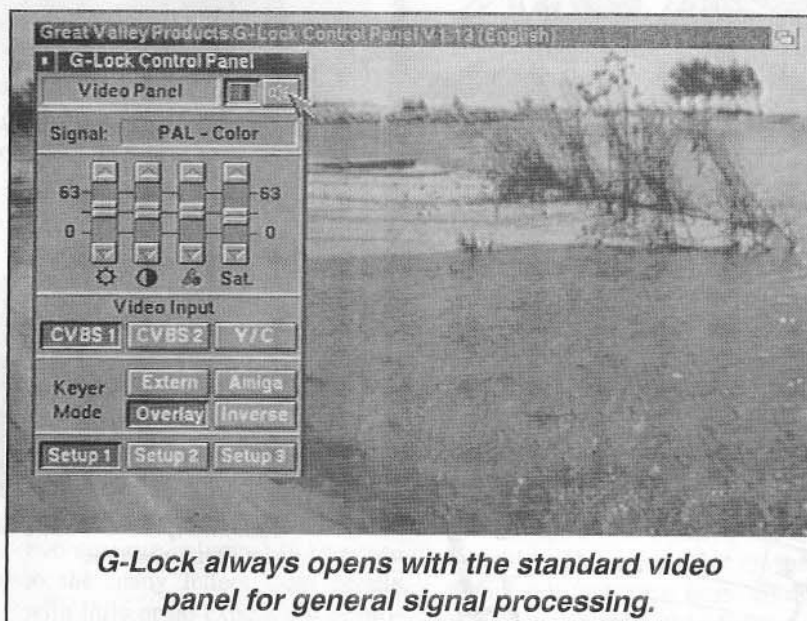
In practice this means the G-Lock combines a broadcast quality genlock with an equally high grade video processor, the latter offering a wider choice of adjustable parameters than many dedicated stand-alone consoles.

Sliders and buttons

There's nothing negative to report about the G-Lock's output quality, which definitely meets even video enthusiasts' performance standards; do the controls measure up?

Unless the factory settings are changed, the G-Lock allows access to just two control panels, which contain the most important and, at the same time, easiest to understand and operate signal processing options.

The video panel automatically comes up first whenever the software is run. In its status field the user gets basic information about the incoming video signal - "PAL-COLOR", "PAL-B&W" or "SECAM-COLOR". Simple SECAM to PAL transcoding is possible, but not at broadcast quality. Although the G-Lock is optimised for the TV system in the country of purchase, Australian owners can process NTSC sources in good quality when running Workbench 2+, which allows you to switch the computer between PAL and NTSC screen modes without bashing the hardware.



Four sliding controls affect contrast, brightness, hue and colour saturation of the video footage. The level of adjustment (64 steps) is indicated in the title gadget at the top of the panel.

Three input buttons give a choice between one S-Video and two composite sources. As the switching is performed in software, and the 4-pin mini-DIN high-band socket is actually hard-wired internally to the CVBS1 (luma) and CVBS2 (chroma) RCA connectors, only one type of video signal should be present at any time to avoid interference - sync or colour loss and other distortions.

Multiple outputs

In direct contrast to the input layout, the output is simultaneously available as composite (RCA), S-Video (mini-DIN) and RGB (23 pin) signals. The latter can also be switched (in software) to the professional YUV system if the appropriate equipment and cables are available.

The G-Lock displays the full, processed video on the Amiga's monitor, instead of just the computer graphics like many other

genlocks. This means an additional video monitor or TV set is not mandatory, though still preferable.

A cluster of four buttons determines the way the output signal is put together. In addition to video only, computer graphics only and a combination of both (computer images overlaid on video), you can also do an inverted combination for keyhole events (colour zero opaque, all other computer colours transparent).

Finally, there's a row of three buttons along the bottom edge of the video panel which allows you to save three different setups for instant access.

Pathetic sound

There are actually two more buttons available on all panels, including the advanced options, for giving instant access to the standard video or audio controls.

The audio features are the only real disappointment in the overall picture of the G-Lock. Including sound in this type of equipment will always be questionable - too many compromises have to be made, which usually limits versa-

tility and performance. GVP's solution restricts the user even further by providing only "two in, one out" old fashioned mono.

Although there are quite a few applications for such a setup - for example dual channel commentary - the average video editor will have to buy a stand alone mixer anyway.

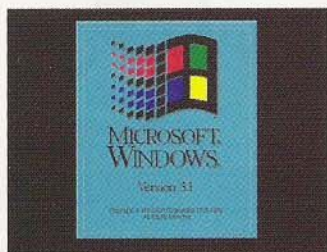
Advanced options

Much more practical for serious work are the G-Lock's advanced options, which are unfortunately not available on pre-ECS machines. You make the advanced menus accessible by adding "MENUS=ADVANCED" to the G-Lock icon's ToolType window.

Some of these options are best adjusted with the aid of dedicated service instruments, but since there's a global factory reset provision, more experienced operators may try to improve results by visually assessing any changes. As usual it's best to evaluate the performance from tape after recording, to avoid any nasty surprises later. The first collection of processing tools are automatic/manual input signal selection for PAL/SECAM standards (not available in NTSC mode). A kill button removes the chroma subcarrier for forced black & white output.

Video output quality is strongest with a stable timebase, as supplied by a live signal from a camera. But since genlocks are chiefly employed for tape editing, at least in semi-professional and amateur applications, the G-Lock can be set to work with larger tolerances when connected to a VCR, which is also the default setting.

Three sliders control the Sub-carrier Phase (+/- 5 degrees), R-Y/B-Y gain balance (additional hue control) and R-Y/B-Y saturation balance.



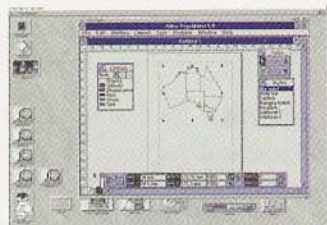
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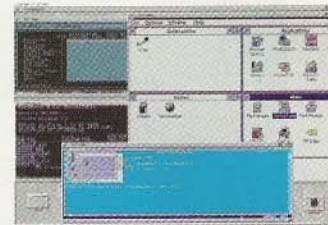
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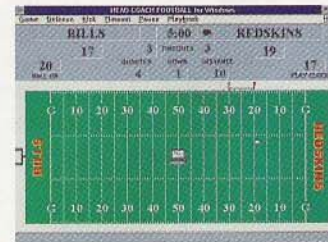
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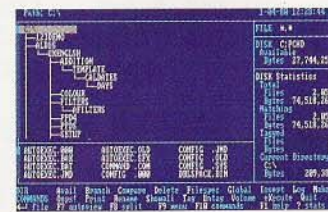
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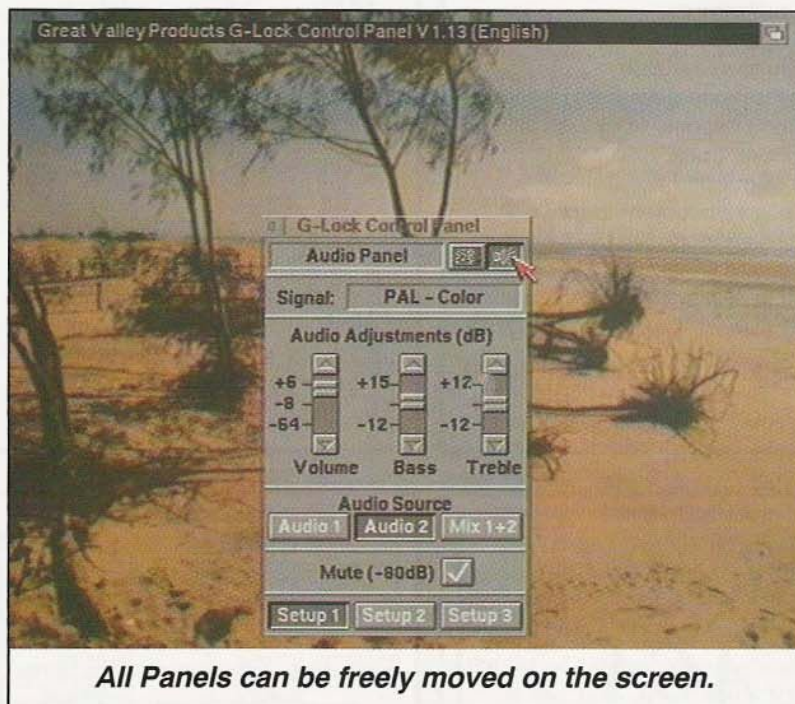
Higher sharpness

The second "Proc.Amp" panel allows adjusting the saturation of Amiga graphics together with the live video. Normally only the video input is affected. There are also several levels of Luma Delay to cure registration problems (mono and colour parts of the image not correctly aligned), Luma Peaking for increasing the apparent picture sharpness and a Filter Trap to remove possible audio from the composite signal and thus avoid any interference.

The controls on the third advanced panel are largely for the professional user, as they give a choice between RGB and YUV colour processing and therefore require expensive additional equipment out of the reach of most amateur budgets. Of some limited interest for the average user may be the option to individually remove the red, green and/or blue components from an RGB signal for special effects.

Chroma keying

In contrast, creative users will applaud the fourth panel, which gives control over the way Amiga graphics are displayed. Border Blank and Border Opaque determine whether or not a border will



All Panels can be freely moved on the screen.

surround the standard (text) display area. The first has the higher priority and decides if the strips around non overscan images are transparent or not. The second introduces an opaque frame even on overscan pictures.

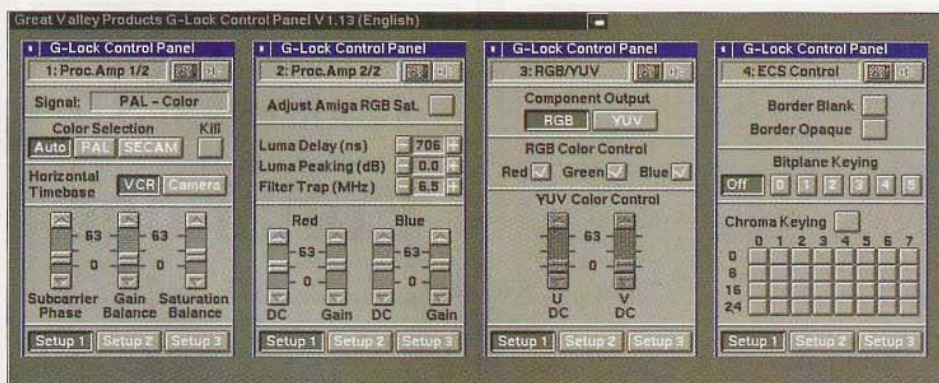
Bitplane keying allows to make all colours in the (one) selected bitplane invisible (transparent), while individual hues, up to 32 on ECS and 256 on AGA machines, may be chosen in chroma keying mode. Obviously, if all

colours are selected at once, there will only be the live video on screen because the Amiga graphic is completely transparent.

Amiga owners with a good knowledge of ARExx programming can take charge from inside other programs and control the G-Lock via scripts. This is extremely flexible and the major selling point, apart from the excellent image quality. A number of sample scripts are provided, including one to use the genlock as an electronic colour splitter for Digi-View type slow digitisers, via a cable connection to the joystick port.

In combination with a presentation package like Scala, even in the Home Titler incarnation, there is almost nothing the creative videographer can't do, including separate fades of the live video and/or Amiga graphics.

For its price, the G-Lock is a bargain and deserves a lot more attention than it has received. □



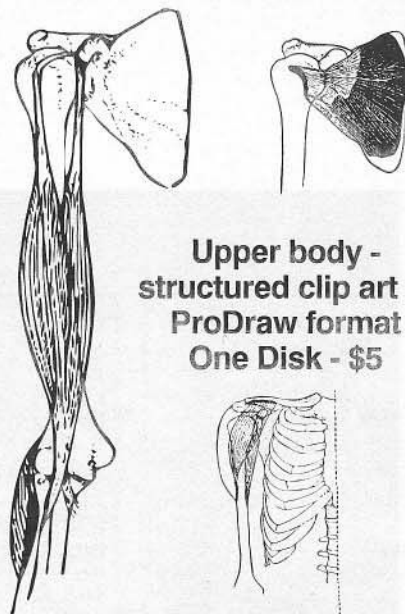
Four additional control panels can be accessed after modifying the ToolTypes of the Workbench icon.

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Author	Title	Publisher	of public
Adams, Douglas	Dick Gentry's Public Collective Agency	Pan Books Ltd	1989
Adams, Douglas	Hitchhiker's Guide to the Galaxy, The	Kala Publishing	1986
Baum, L. Frank	Wizard of Oz, The	Wanderer Publishers Limited	1983
Brenford, Dick	Uncensored Boy's Own, The	Macdonald & Co (Publishers) Ltd	1990
Boardman, Tom Jr	Science Fiction Stories	Octopus Books Limited	1983
Burnet, Frances Hodgson	Secret Garden, The	Octopus Books Limited	1983
Carroll, Lewis	Alice's Adventures in Wonderland	Octopus Books Limited	1981
Clarke, Arthur C.	2001: Odyssey Two	Granada Publishing Limited	1982
Clarke, Arthur C.	2001: Odyssey Three	Granada Books	1983
Crichton, Michael	Jurassic Park	Random House	1991
Davis, Jim	Garfield: Here's Looking at You	Partridge Books Limited	1985
Davis, Jim	Garfield: Life And Laughs	Partridge Books Limited	1986
Davis, Jim	Garfield: We Love You Too	Partridge Books Limited	1985
Forde, Sir Arthur Conan	Lost World, The	Hammond Publishing	1982

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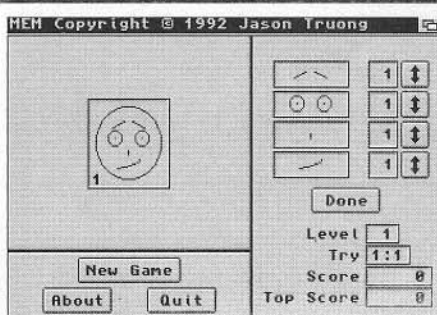
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Workbench 3.0

NEW NEW NEW NEW NEW NEW

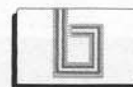
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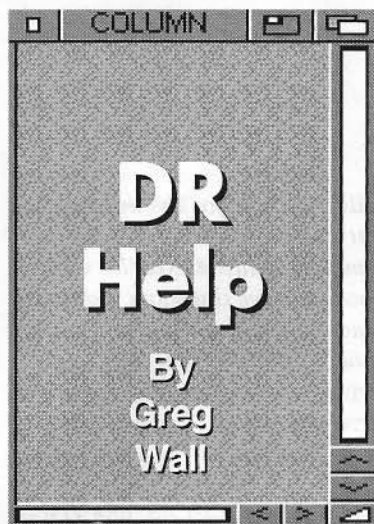
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What's blown?

Dear Helpline, first things first - you've got a great format going now.

The magazine has taken on a new, more refreshing and informative style which should guarantee its survival for many years to come. But enough of the sucking up. Here's my problem.

In September's Amiga review Helpline you gave a response to Joe Rosendale regarding connections to the Amiga when powering up ("Plug in danger").

You mentioned the danger of blowing solid state fuses on the motherboard, which would render the parallel port inoperative for digitizing, while still allowing the printer to function correctly.

This is exactly the problem I have with an inherited Amiga 1200.

Could you please describe to me the likely cause of the fault condition which you describe. I don't know whether I will be able to obtain replacements for board fuses, but if I know the area at fault I may be able to bypass it some other way.

Perhaps if you know of a fix you could also describe this. Once

again, thanks for a great mag.

Terry Wahlen,
Warrimoo NSW

Dr Help: Well to begin with, the most likely chip to have blown is the 8520 CIA (Complex Interface Adaptor) chip. These are located on the motherboard near the rear of the A1200. You can get them from Unitech Electronics on (02) 820 3555; they cost around \$42 plus freight. The other part that may have blown is one of the 4.7 ohm resistors behind these, classed more accurately as a "Fusible link resistor" and these are also available from above number or your local service centre.

As a suggestion, try opening up your A1200 and locate the CIA chips (they have the Commodore logo followed by the number 8520 stamped on them), and try swapping them around. If your computer still doesn't work properly, but doesn't work in a different way, you know one of the CIAs is at fault. It's possible that both of them are blown in the same way, but this is rare.

As mentioned in the September issue, make sure you power down before adding anything (this includes mouse, keyboard, joysticks, printers, monitors, modems and so on). In fact, power down before plugging in anything except the sound connections. Thanks for your positive feedback.

Startup picture?

Dear Helpline, Congratulations to Lynd Koh of W.A. on your letter (August issue) on "All you

wanted to know about Amiga, but were afraid to ask". It cleared some air for me. Jargon Busters are also a source of information.

I would like to put in an IFF picture into the user-startup to display while my machine is loading. How do I transfer an image from, say SCALA or DPAINT? I assume it's all done through the text editor. Does the command go on any particular line, and what is the correct "Amiga Pic" statement? Looking forward to next issue.

Norm Dean,
Alexandra Hills, QLD

Dr Help: On startup the Amiga has many tasks to do; the more you add to this list the longer it will take to load up. I have many things that run in startup, probably too many. There are many PD picture displaying programs available, these can be run from the cli or shell.

What you are looking for is a dedicated displaying program that's built to put pictures in startup, automatically getting rid of the picture when Workbench comes up. BootPic, a Workbench 2 or higher only program on Fred Fish's AmigaLibDisk 963, does this and can even play a MED format music module while it's at it! IFFBoot, a simpler but similar program that also needs Workbench 2, is on Fish 800. Either can be added to the list of startup commands run by the computer.

To clarify this, the user-startup is supposed to be where the user (you) puts any additional programs you want to run; you're officially supposed to leave the startup-sequence alone so that if you



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upgrade your Workbench and the newer version overwrites the start-up-sequence you still keep all of your custom stuff in the user-startup.

But there's a problem here if you want the picture to be displayed at the beginning of startup. If you put the boot picture displayer in the user-startup, all you need to do is edit the user-startup in the s: directory and add the relevant command as described in the manual file for whatever displayer you use. However, this means you won't see the picture until the startup makes its way to the user-startup, which is called at the end of startup-sequence.

To make the program run earlier, you need to edit the Startup-sequence, and probably insert the command line just before the IPrefs. Warning - if you make a mistake editing this file and delete or change things, you may find that your Amiga will not start up correctly. Make a copy of the startup-sequence first, for safety.

The command to use for editing text files like the startup-sequence and user-startup is ED.

Expanding A600

Dear Helpline, I have a slight problem with my Amiga 600. I bought one last Christmas, not knowing a thing about Amiga's. At the time, it seemed like good value for money, although now I wish I'd bought an A1200. I've been impressed with the 600's capabilities (apart from the fact that after having it only two months it

had a five month trip to Sydney for repairs under warranty), and now I wish to expand it.

I've bought a 40Mb hard drive, and had a friend install it. Unfortunately, I only have the KickStart 37.299 ROM Chip, and thus the Workbench won't recognize the hard drive. Furthermore, the only KS 37.350 chip (which I'm told is the one I need) that I can find is \$110. I was wondering why on earth Commodore would put the .299 chip in, when they knew full well it would stop the computer from being upgradable? The least they could do is make the 350 chip readily available.

If I do pay the extra \$110 for the KS 37.350 chip, am I likely to encounter any other barriers stopping me from getting my hard drive working? Would I be better off just buying an external drive (which I presume just plugs in the back), and running Workbench from that?

**Nathan Johnston,
Port Hedland WA**

Dr Help: Why did CBM put a 37.299 chip in the A600? Who knows. Maybe it was cheaper. The problems with availability probably stem from the current situation CBM finds itself in - or doesn't find itself in, as the case may be.

You would not be better off just buying a second disk drive; the hard drive has much more going for it, as you will soon find out. Once you have owned a hard drive you would never want to go back to using any floppy based system. Finally, yes, an external drive does plug into the rear of your 600, but

leave it alone for the moment and get your hard drive up and running. Maybe you'll want a second drive later on down the track. You shouldn't run into any other problems as long as the drive is compatible, and it probably is.

Locking drives

Dear Helpline: Please help! I own a A600 with 2Mb of RAM and a 40Mb hard drive. I have a problem in that my two little brothers (who have no idea how to use a computer) keep deleting stuff. I saw in one edition of ACAR that you could type in (Lock sys: on) to lock the hard drive, but this only works if you don't turn off your computer. Once you turn it off and then on again that command is no longer there! I also own Directory Opus if that helps.

I also own WordWorth 2, is there any way to upgrade to WordWorth 3?

Keep up the good work at ACAR.

**Steven Morris,
Bowraville NSW**

Dr Help: To set your computer up so that it is locked when you turn it on, all you need to do is insert the lock command into the user-startup. I'll take you through it. Load up your computer and open a shell window. Type in "Ed s:user-startup" and press return. A new window will open up. If there is already information in there use the cursor keys to get down to a blank line and type in "Lock sys: on" and press return.



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P.S. Merry Christmas to all from Wall Street Video

Next, type in "Lock work: on" and then hit the escape key, press x and then return. Wait until the disk activity finishes, and then reboot the computer. The user-startup will run and find your command to lock both partitions of your hard drive. Your 600 is now childproof. If you want to change something, just type in Lock (sys or Work): off and you're ready for action.

WordWorth is upgradable. For information regarding upgrades contact Amadeus Computers on (02) 652 2712. The upgrade cost is \$110.

Monitor Choice

Dear Helpline, I'm hesitant about buying an appropriate monitor in light of the new AGA chipset. The main problem is the wide variety of Amiga screen modes, and whether or not particu-

lar monitors can display them all.

As far as I know, it mainly depends on the monitor's capacity for vertical and horizontal scan rates. On the 1084S, these rates are limited, causing the dreaded interlaced flicker in high Res mode.

The answer would appear to be a new 1940/42 Bi-Sync monitor. However, an ad in Amiga Format magazine says that these monitors can handle most screen modes, including the new Super HiRes AGA modes, but not the more common LowRes, as found in many games. Is this true?!

CBM's 1960 & other multiscan monitors aren't the answer, as most comply with IBM compatible S/X/VGA standards. They can't accommodate all the Amiga screen modes, which tend to have much lower scan rates. Help!

P.S: Is it possible to patch both

an Amiga & IBM system into a single monitor? Ideally I'd like a single switch box to re-direct video & audio output.

David Rich

Caringbah NSW

Dr Help: Perhaps what you need is one of the new "MicroVitec" monitors from Amadeus Computers or Sigmacom (see ads this issue). They work in all AGA display modes and will also accommodate the lower scan modes found in low res games. They flicker if you use Super High Res laced, but that's a problem with the computer, not the monitor. You could also use a second hand NEC Multisync 2 or 3, but these are rare. See you all next month. □

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What's going on?

Congratulations on the updates made to ACAR. The magazine has finally closed the gap left by the passing of Professional Amiga User magazine. Well one and keep it up!

I have noticed that ACAR has become much larger, better laid out and contains more interesting articles ever since Commodore went broke. Weird, isn't it?!

The parent company goes for a tumble and our local magazine grows into a major publication (the same cannot be said of Amiga Down Under, which seems to have done just that - gone Down Under). Maybe Commodore should have shut its doors years ago!

Now for the most asked question in the last nine months. What's going on? Has Commodore UK got the Amiga, or are we going to have to wait for another

round of bids? I think the people running this fiasco just enjoy holding auctions.

If Commodore change their name to "Amiga International" (or something like that), what will become of ACAR? Australian Amiga Review sounds great, but AAR sounds like you've just left the dentist!

Seriously, the takeover must be completed before Christmas, if there is going to be anything left to market. Print the address of the people involved and we'll set up a petition.

Ken Woodward,
New Lambton NSW

Ed: Thanks for the encouragement, Ken; while the new improved ACAR might not be to everyone's taste we're definitely getting more positive feedback than negative.

For the latest on the Commodore saga and its implications, check out this month's Editorial. Essentially, it's still a case of hurry up and wait; the end's in sight, but it seems somebody tows it further away while we trudge towards it.

We've been calling the magazine Amiga Review for short for a while now, and might well change the name officially if an Amiga corporation emerged. In a market where the other magazines' acronyms are AF, AC and AS we don't feel AR would be too far behind.

Petitions aren't all that useful in a situation like this. The creditors, monster corporations like Prudential, wouldn't care if a million people proclaimed their love for the Amiga; they just want to get some money back. The liquidator is just working on behalf of the creditors, so he's not he one to go

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for. And Commodore UK and CEI already know there are lots of worried Amiga users out there, so you might as well save your paper.

Where do you get it?

I have received two disks I ordered (the Infra-Rexx software) and find I can't use them because I don't have the required tools. The disks need Amigaguide and Installer. I have checked with my local dealer, who does not know of them and cannot help. Could you please assist me in obtaining the necessary software - what does it cost?

**L. J. Varlet,
Kenwick WA**

Ed: It's odd that your dealer didn't know about Amigaguide or Installer - they're both part of Commodore's standard Workbench package, although many Workbench installations don't have them thanks to the 147 flavours of the operating system out there. You can get both of them on Fred Fish's AmigaLibDisk 870, available from any decent PD library for peanuts. A later version of Amigaguide is on Fish 920.

Amigaguide files can be viewed with any ordinary text display, or loaded into a text editor, word processor or what have you - you just have to put up with some hypertext formatting stuff mixed in with the text. Installer scripts only work with Installer, though.

Sorry tale

I hope this letter helps other first time computer buyers. I recently saved up to purchase my first computer; I'm unemployed so it wasn't easy. I eventually had \$1400 saved and after a few enquiries about what was the best for what I wanted to do, I opted for an Amiga. I wanted to do paintings (as I currently earn a few bob doing my Aboriginal paintings), word processing and video work. I was told the Amiga 600 would do these things. I bought an A600 with only 1Mb RAM, no hard drive and nothing else, and paid \$698

for it (I'll leave it up to readers to decide if this was a good price...).

I also bought a Star LC-10 colour printer (\$445). I believed I'd have to spend nothing on the computer, so could soon save up for a monitor.

I soon found out that I needed an extra floppy drive, and reluctantly bought one for \$179 from the same place. Then I learnt about hard drives, and found out that I would have to change the 600's Kickstart chip to fit one. Further expense.

Also, the programs I was using would not work properly. I learned that to run most good programs I'd need more memory and a hard drive. I was not told this to start off with, and was under the impression that the 600 was totally upgradable if need be. It's not! I approached the dealer to get my money back within two weeks, and still have not had a refund. It's now in the hands of Business and Consumer Affairs. I'm trying to save enough to purchase a 1200, which will do what I want and is much more upgradable.

My message is - look around first, ask people like Amadeus, Wall Street Video and Amiga Review, and BE CAREFUL! This has really turned me off - I even had thoughts of buying a second hand IBM. I won't, though, as I know I just struck a shonky dealer (in my opinion, and not Amiga Review's). I think the 600 would be OK for games, but not much else.

Also, could you tell me why the 600's such a flop compared with other Amigas? Why, also, are they nearly impossible to upgrade?

Keep up the good work, Amiga Review, as I've learnt a lot from reading your magazine. Oh, by the way, if the dealer does refund my money I'll write and tell you.

**Trevor Miranda,
Lithgow**

Ed: Your story, while unfortunate, is hardly unusual. As has been happening in the used car industry for decades, novices are easy meat for any dealer

who wants to pull a fast one.

The price you paid for a floppy only A600 would just about cover a hard disk equipped 1200, five times faster with twice the RAM - if it weren't for the scarcity of machines at the moment. Nonetheless, you were ripped off severely on the computer, though the prices for the printer and drive weren't incredibly steep.

There's no law against charging high prices, but if it happened the way you say then the dealer falsely described the product, specifically by saying you could expand the 600, when all you can really do is put in up to two hard drives and some more RAM. You can't make a 600 faster; you can't add cards, you can't plug in a high resolution flicker free monitor, you can't add a SCSI interface - the list goes on. The 600's low upgradability is the main reason behind its orphan status, but it doesn't help that it's got a sawnoff keyboard and doesn't work with old, fussy games that want Kickstart 1.x.

The moral of the story is simple - shop around. If you don't you may get a perfectly good deal - or you may not.

□

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Making sense *of Fonts*

By Andrew Farrell and Daniel Rutter

► The Amiga is not blessed with the most elegant of font systems. The ideal solution should be one which can be adopted by all applications, safe in the knowledge that is the best, and one suited to all kinds of printers.

Workbench 1.3 was limited to bitmapped fonts. Programs that needed the more sophisticated abilities and quality of outline fonts had to supply their own solution. The desktop publishing program Professional Page was the first. Others followed, and before long there were a number of different, incompatible solutions to make up for the lack of a built-in outline font engine.

All this confusion should have been done away with the advent of Workbench 2.1 with its own outline font engine, but Workbench 2.x has a clumsy and slow method of dealing with outline fonts, which doesn't really cater very well for owners of Postscript printers.

There were rumours that somebody in Commodore had their hands on a better alternative, but that a deal was done with a major software publisher - possibly the

people who make Final Writer. So instead of Workbench landing a solution that would have meant better fonts for everyone, it went to a single program.

By the time Workbench 3.0 turned up, we still had our original bitmap fonts, we had Workbench's outline fonts, Truetype fonts, Adobe Type 1 and 3, Gold Disk

metric and CompuGraphic, NimbusQ and Softlogik fonts. There may be others, but these are the main players.

Types of fonts

All this fonting around might have you thinking there are a dozen ways to make a font. There are really only two - the many

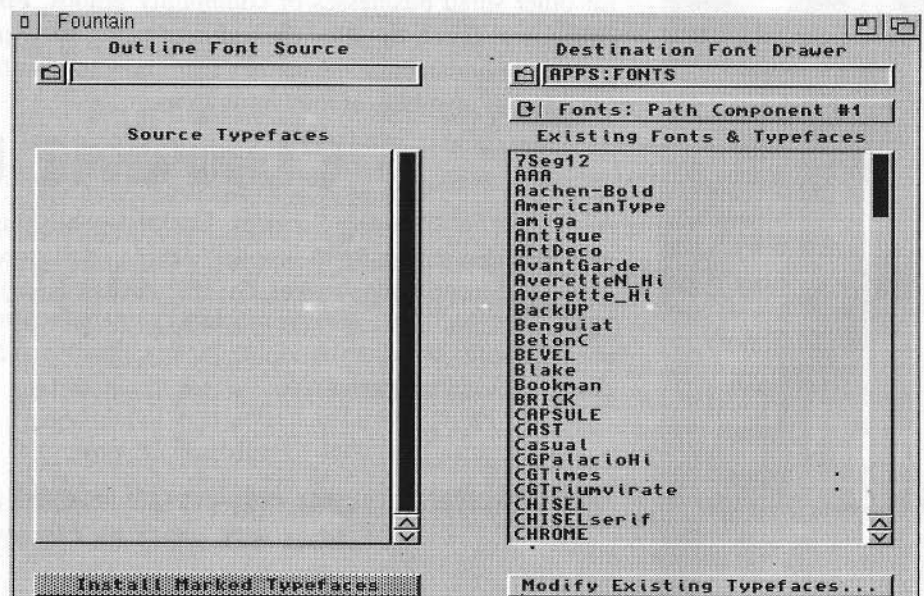


Fig 1

variations are just strange derivatives of these two basic methods.

The first and oldest is the bitmap font. This is a font where each letter is described as a matrix of dots. Make a character bigger, and angled lines develop a staircase appearance. Make it smaller and the detail is lost, making some letters hard to read. Bitmap fonts are simple, but they are not flexible.

Storing information about a bitmap font is very simple. Each dot in the matrix takes on a binary value. Add up the dot values in each row and you have a single number to represent the detail in that row. A simple 8 x 8 dot character can be stored as eight numbers between 0 and 255, using only a small amount of data.

Outline fonts, on the other hand, are described geometrically - as lines and curves. This description can be used to generate variations on the basic design both in size and style. This means you can scale them to any size, bold them, italicise them and so on and, screen or printer resolution permitting, they'll be smooth and legible.

But describing an outline font is a complex business. Not only does the description of each character require much more information, but a special engine (a small program designed to work with another program) is required to interpret the font description and render a version suitable for the output device.

The bottom line is, outline fonts give you better quality, more flexibility and are generally well worth the trade off in speed. The interesting part is just how much that speed variation can be.

The speed, or lack thereof, of handling outline fonts is partly due to the different way they're described. However, it's mainly be-

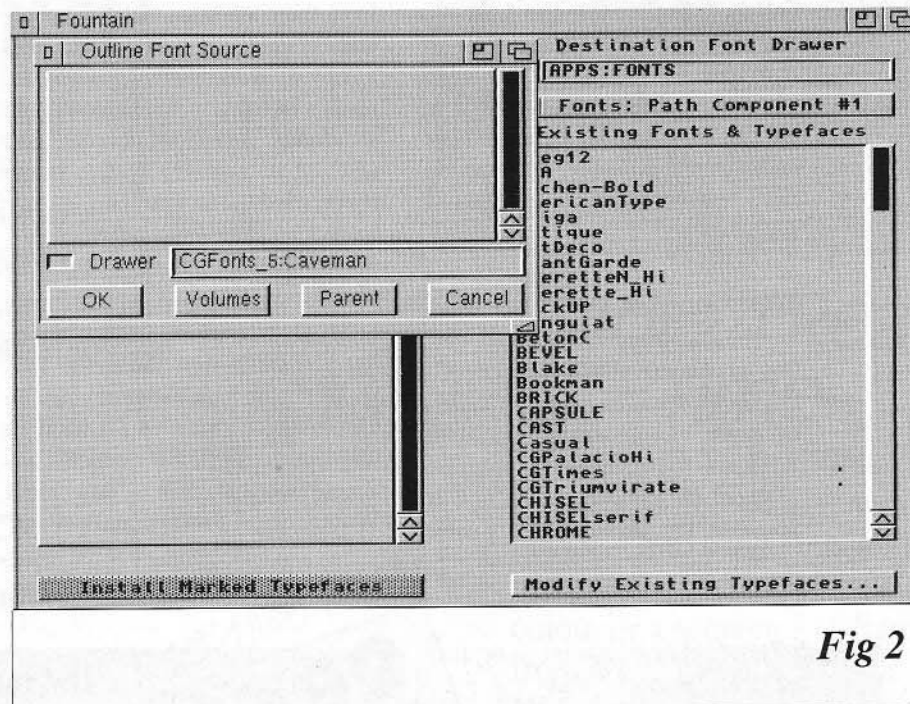


Fig 2

cause of the variation in performance of different outline font engines. Final Writer has a fast outline font engine. Workbench has a slow engine.

Another consideration is how accurately the outline description translates into a rendering to the screen or page. Professional Page has a program called CreateFont which makes outlines of a considerably better quality than you'll get on the fly out of Workbench. If you're into video titling and you need a big juicy 180 point letter O, it's well worth checking to see which program generates the best circles.

Fonts and Workbench

On your Amiga, by default, you'll find the fonts available to Workbench in an iconless directory on your boot disk called "fonts". Your basic Workbench screen font is bitmap.

The one you probably see most is Topaz. This is a non-proportional font, which means each letter takes up the same

amount of space. There's no allowance for wide letters and narrow letters. This makes it easy to have columns line up under each other, and the size of a word is always predictable - the very thing you want when you're trying to create a fast, easy to manage interface.

Of course, if you want one that users can configure any way they want then you'll need much more complex font handling - which is where Workbench 2.x comes in.

If you check out your fonts directory with the shell, or (better) from a directory utility program like Directory Opus you'll see each font has a file ending in ".font" and a directory. Inside the directory are the actual bitmap images for each font size. The font file tells the Amiga what sizes you have and where they are.

Change anything without the Amiga knowing, and you'll need to run FixFonts to make sure the available font sizes match the list stored in the font file. What we really need is a good font manager,

but there isn't one! The best we can do is use a directory utility to shift the fonts around, and keep FixFonts handy - you'll find it in the System drawer on your boot disk; use the Leave Out option from the Icon menu to keep it visible.

Workbench 2.x and up

Here's where things start getting confusing. Early Workbench 2's shipped with a program called Fountain. Later (officially with Workbench 3.x) this program changed its name to Intellifont. If you mix the diskfont.library files

from these versions of Workbench, your system will crash. There was a copy of Workbench 2.1 doing the rounds in Sydney which contained a dodgy diskfont.library and resulted in a severe system bomb if you tried to run Fountain.

Whichever program you use, they both work the same. They let you install outline fonts, and create bitmap versions of outline fonts, but you can't view the fonts. This shortcoming is rather annoying. To view outline fonts you'll need to use an application which has access to that font - say Final Writer or Professional Page.

Trouble is, Professional Page, like a lot of applications, needs its outline fonts to be in a special directory - in this case the CG-Fonts directory. Pro Page cannot look at normal Workbench outline fonts. However, Pro Page's CG-Fonts can be installed as Workbench fonts - although they change format in the process. It's all a bit messy. I've found myself with the same font in half a dozen formats for use by as many programs. There must be a better way!

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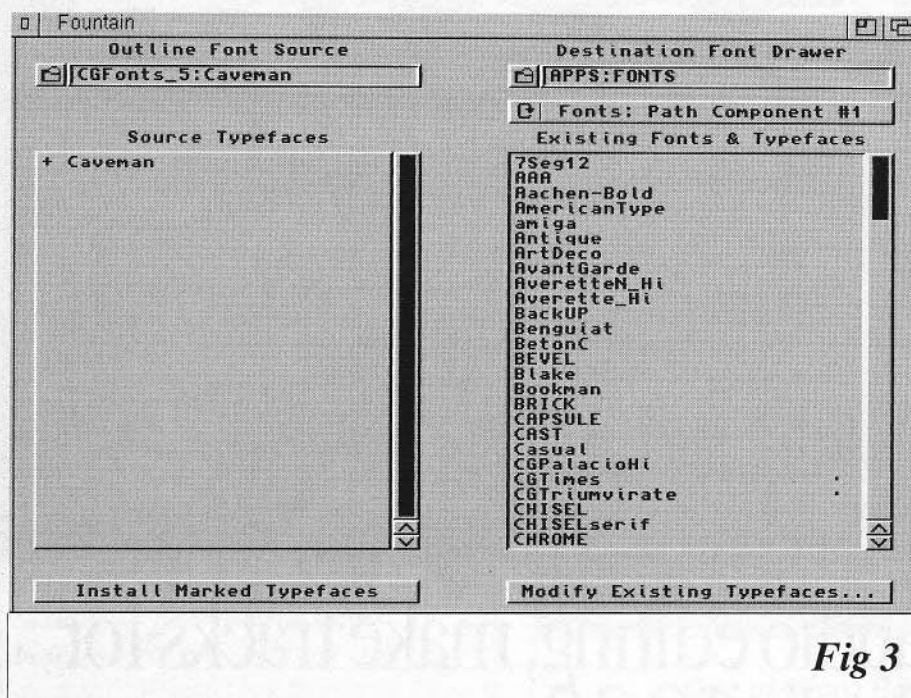


Fig 3

Professional Page vs Pagestream

Thankfully, Pro Page 4.1 has the ability to preview fonts. But, like Workbench, jiggering with the fonts ProPage has on hand requires quitting the main program to run the utility CG-Update. Without doing this, new fonts won't show up. Pagestream 3.0 is much more elegant. Different fonts, in different formats, stored in different places, can be added to the available font list in Pagestream using the built in Font Manager. I can't wait for it to be fast enough to justify using.

Using Intellifont

Fountain and Intellifont are very useful programs, but they're covered poorly in the Amiga manuals. Using them to modify existing fonts isn't very hard, but importing new ones is more confusing. Here's how to do it, step by step.

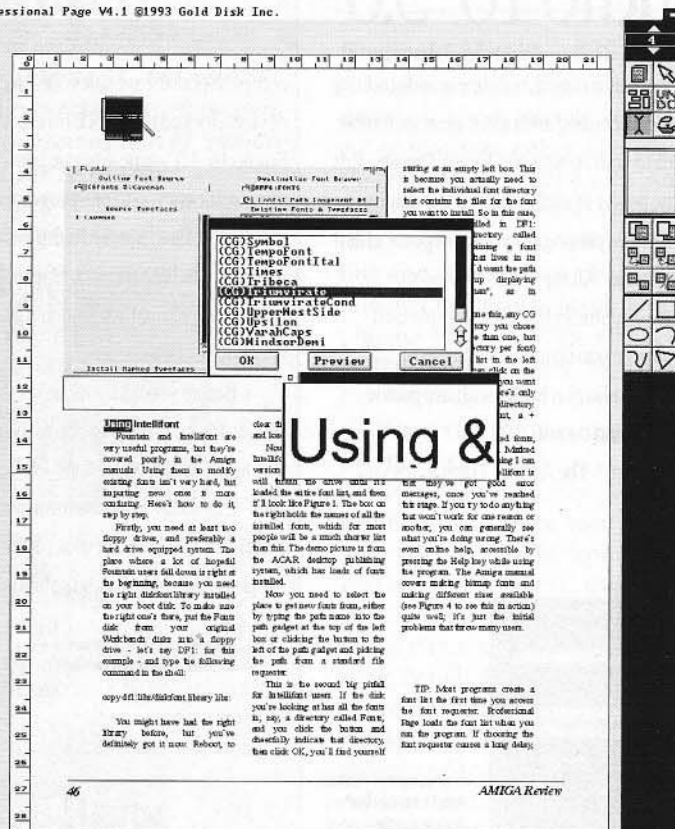
Firstly, you need at least two floppy drives, and preferably a hard drive equipped system. The place where a lot of hopeful Fountain users fall down is right at the beginning, because you need the right diskfont.library installed on your boot disk. To make sure the right one's there, put the Fonts disk from your original Workbench disks into a floppy drive - let's say DF1: for this example - and type the following command in the shell:

```
copy df1:libs/diskfont.library libs:
```

You might have had the right library before, but you've definitely got it now. Reboot, to clear the old library out of RAM and load the new one.

Now run Fountain, or Intellifont, depending on what version

Professional Page V4.1 ©1993 Gold Disk Inc.



Pro Page can preview fonts, but it'd be nice to have the feature integrated in Intellifont.

you have. The program will thrash the drive until it's loaded the entire font list, and then it'll look like Figure 1. The box on the right holds the names of all the installed fonts, which for most people will be a much shorter list than this. The demo picture is from the ACAR desktop publishing system, which has loads of fonts installed.

Now you need to select the place to get new fonts from, either by typing the path name into the path gadget at the top of the left box or clicking the button to the left of the path gadget and picking the path from a standard file requester.

This is the second big pitfall for Intellifont users. If the disk you're looking at has all the fonts in, say, a directory called Fonts, and you click the button and cheerfully indicate that directory, then click OK, you'll find yourself staring at an empty left box.

This is because you actually need to select the individual font directory that contains the files for the font you want to install. So in this case, with a disk called in DF1: containing a directory called CGFonts_5, containing a font called Caveman that lives in its own directory, you'd want the path box to end up displaying "CGFonts_5:caveman", as in Figure 2.

Once you've done this, any CG fonts in the directory you chose (there can be more than one, but often it's one directory per font) will appear in a list in the left window, and you can click on the names to select the ones you want to install. In Figure 3, there's only one font in the Caveman directory. When you select a font, a + appears before its name.

To install your selected fonts, simply click the "Install Marked Typefaces" button. One thing I can say for Fountain and Intellifont is

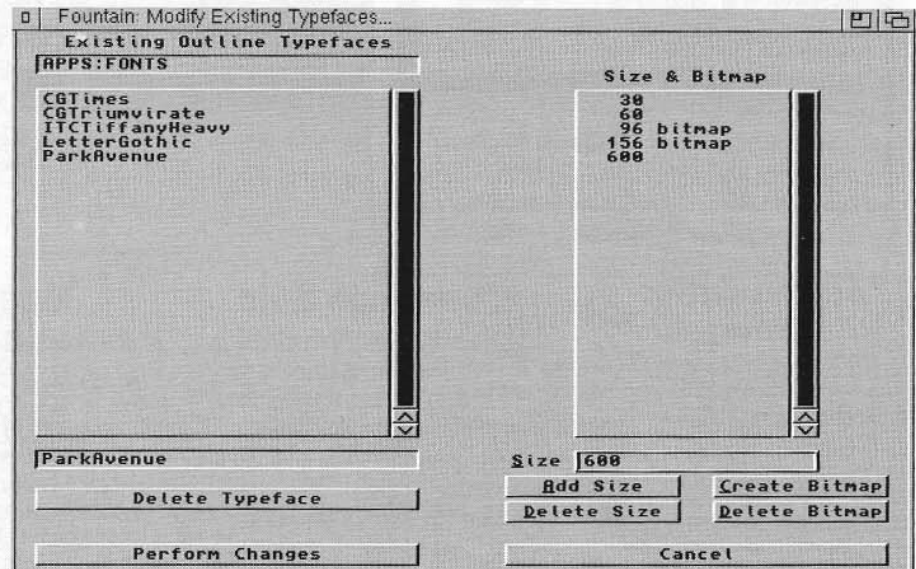


Fig 4

that they've got good error messages, once you've reached this stage. If you try to do anything that won't work for one reason or another, you can generally see what you're doing wrong.

There's even online help, accessible by pressing the Help key while using the program. The Amiga manual covers making bitmap fonts and making different sizes available (see Figure 4 to see this in action) quite well; it's just the initial problems that throw many users.



TIME SAVER

Most programs create a font list the first time you access the font requester. Professional Page loads the font list when you run the program. If choosing the font requester causes a long delay, it could be time to delete some fonts or move those you rarely use out the way. You can also get public domain font list cache programs, that buffer the entire font list in RAM so font list checks after the first one are much faster. Call your local PD software library for more information.

Typeface: The basic shape of a character set, for example Times or Helvetica.

Style: The weight (how thick the lines are - Bold, Heavy, Light) and slant of the characters (Regular or Roman, Oblique or Italic).

Font: A particular typeface and style of text, for example Times Bold.

FixFonts: A program, included with Workbench, which goes through your fonts directory and makes sure all the font description files and the font sizes actually available agree with each other. With lots of fonts this can take a long time, since there's no way for FixFonts to know which fonts have been changed.

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Amiga CD-ROM *Roundup*

By Daniel Rutter

► The Amiga is not as well off as the PC as far as CD-ROM software goes. There are far fewer CD equipped AMigas than PCs, and hence not as much incentive for software producers to come up with CD products. Nonetheless, retailers report unprecedented demand for Amiga CD software; the many CD32, CDTV and A570 owners out there are networking their CD machines to more powerful Amigas, and many others are buying CD-ROM drives.

Dedicated Amiga CD-ROM applications are rare, but there are a lot of other discs Amiga users can access. There are plenty of Amiga-specific freely distributable software compilations, and a lot of non-machine specific PC discs that Amiga users can get value from, too. A selection of the most recent is the subject of this article.

Sound Effects \$60

This disc, which dates back to 1992 and comes from Sound Ideas, a company that's produced a lot of other sound effect stuff, is not an Amiga specific disc. It contains 300 stereo WAV format sounds, which can be converted to IFF with a program like SOX, in

the public domain. The WAVs are sampled at 22.05kHz, precisely half the sampling rate of CD, and hence don't sound too fabulous, though they'd be fine for most applications.

Sound Effects is actually meant to work with Windows with a built in sound browser program whose interface looks quite good - but fortunately it's easy to find sounds without it, since there's an accompanying booklet that lists them all by reference number. If all there was were these WAV files it'd hardly be worth the money, but fortunately you also get all the sounds in ordinary CD audio tracks, so you can digitise them yourself at whatever sample rate you like.

Because CDs with 300 tracks make players unhappy (you can only have 99), the sounds share 98 tracks; since they're organised alphabetically, this makes for some odd bedfellows. Dentist drill next to doorbell, geiger counter before "gun, hand" and so on. There's a wide selection of realistic, synthesised, serious and silly sounds here; if you need a modest effects library or just want to clown around, this disc isn't a bad choice.

Meeting Pearls \$49

It may be early days, but this is definitely a genre in the making - the Potpourri Disc. You name it, it's here; pictures of various flavours, SoundTracker modules, PD disks, installed programs... the list goes on.

The oddly named Meeting Pearls hails from Germany, and contains about 600Mb of stuff. On a bootable CD you get to start with AMOK PD disks 98 to 106, and 147 huge 256 colour fractal GIF pictures.

There's about 17Mb of MODs (168 of them), and a plethora of business, utility, entertainment, communication and other programs, all set up and ready to go. This makes this disc an excellent starter for people just getting into CD and not too comfortable with setting everything up themselves, and makes things very convenient for old hands too.

There's tons of text, most in English, and mainly on computer-related topics but with some other weird stuff thrown in. Interestingly, you can view all the text contents of the disk and some other unrelated stuff using the HTML hypertext system, which is like

AmigaGuide only better. There are also a lot of very, very boring pictures of European Amiga meetings, which are basically halls filled with Amigas and sallow Teutonic Amigoids.

You get the complete distribution of NetBSD, the Amiga UNIX-in-development for people with at least 68030, coprocessor and memory management unit. It's archived, but this stops the uninitiated playing with it and stomping their system. Still more a curiosity than a real operating system, but getting there.

There's also the full, unexpurgated, 88Mb fully installed distribution of the PasTeX desktop publishing system. This is DTP for people who think a mouse is for wusses; WYSIWYG it is NOT but powerful it IS. TeX has been around for yonks on various platforms; if you're used to friendly desktop publishers then stay a long way away, but if you're a programmer who wants to produce a nifty document, this is for you.

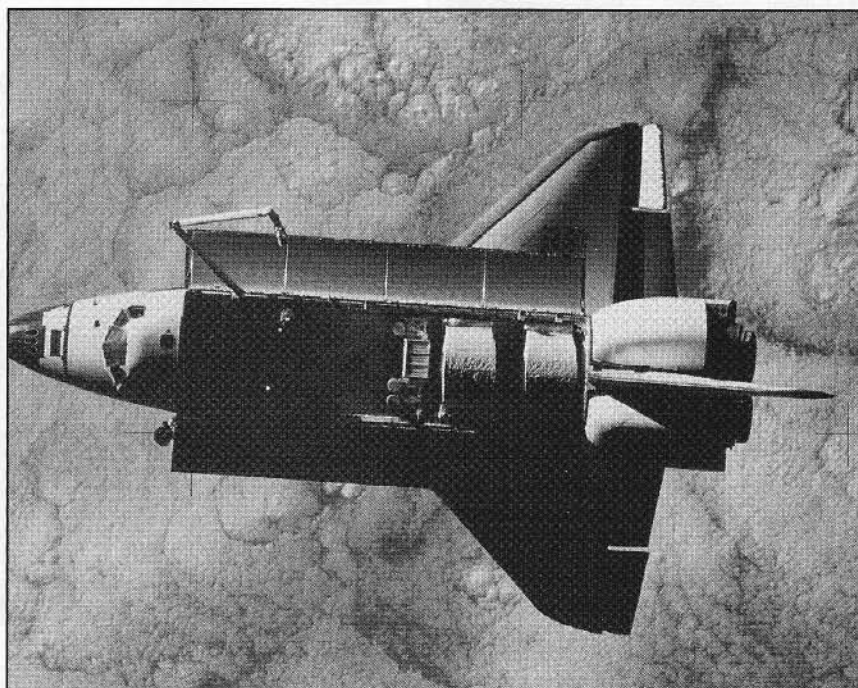
The Meeting Pearls disc doesn't work properly if you use fast directory searching. If your CD driver software has this option, turn it off.

Overall, Meeting Pearls is a bit disorganised but great fun to meander through at your own pace. Take it easy. See the sights.

EuroScene \$39.95

Another garage sale disc, this one centres around the various European Amiga coding groups, who of course spend all of their time creating funky pictures, demos and SoundTracker modules, and never pirate software. Never, ever. Not them, officer. Uh uh.

Be that as it may, this is a disc stuffed with OK to brilliant demos, excellent pictures and music ranging from the odd to the memorable. There are quite a lot of pointless pictures - group logos



A picture from the Space & Astronomy disc.

and the like - but there are plenty more proper artworks, the bulk of which don't need an AGA machine to display. If you're into "scene" stuff, get this disc. Very slick.

Desktop Publisher's Dream Disk \$79

Another one aimed at IBM and Mac users, for Amigoids this disc is a repository of a very great deal of PCX format clip art and TrueType (convert them with TypeSmith) and Postscript fonts. There are HP downloadable, Deskjet, First Publisher, Adobe Type Manager and Windows screen fonts too, but these aren't much use on the Amiga. There's still 3974 clip art images and 608 fonts, though, so it's still a good deal. You get a book with the disc that shows you all the clip art.

Space & Astronomy \$49

This is a disc for the telescope aficionados. There's some DOS

and Mac software of no use to Amigoids, but the vast bulk of the disc is space related data, mainly in GIF and text format. There's loads of pictures - artistic, earth, lunar eclipses, galaxies and stars, Hercules Still Camera images, Jupiter, Kennedy Space Center pictures, Mars, the moon, Neptune, Saturn, rockets, satellites, Space Shuttle pictures, Uranus, Venus, and many more. There are a few WAV format sound files, and a load of text; asteroid information, astronomical catalogues, NASA Daily News from November 92 to August 93, fact sheets, JPL releases from June 1962 to March 1992, the JPL UNIVERSE paper, Shuttle related information, Space Digests from volume 8 to 17, the Space Power Journal, SPX Bulletin, SSEOP Image Database info, Space Station related info, Space Telescope Institute reports, the Space Transport System Mission press kit and, of course, more. Stargazers will be rapt.

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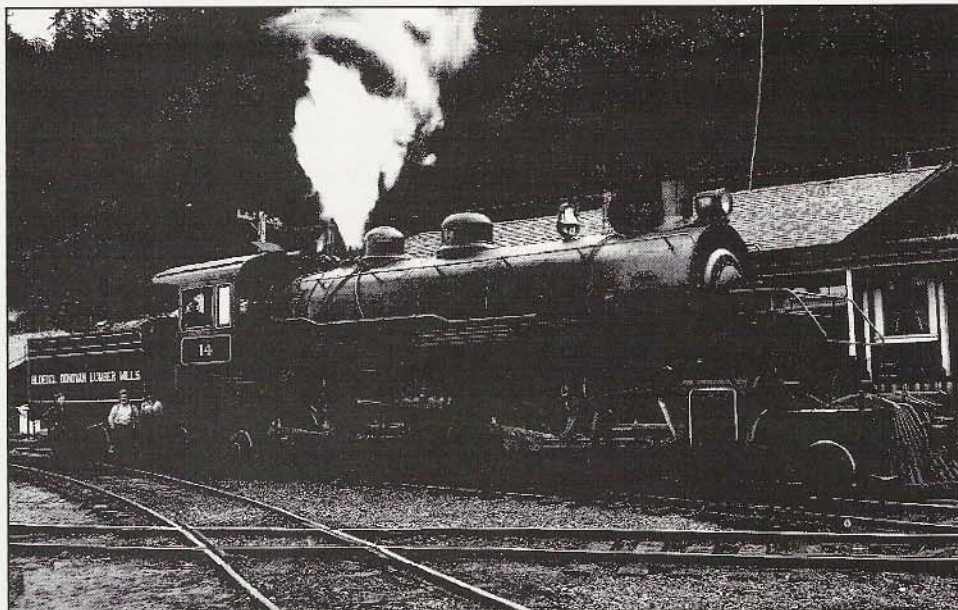
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One of Micro R&D Vol. 1's many train pictures.

Emerald Mines \$39.95

Do not buy this disc. If you do, there's a good chance you'll discover that you rather like playing Emerald Mine, a quite nice Amiga version of Boulderdash. If you do like it, and you play every level on this disc, and it takes you about 20 minutes to finish a level, and you play for an hour a day, you'll have gotten through them all in a bit more than ten years.

Then you can go on to the two player levels.

There are precisely 188 Mines on this disc, and a total of more than 19,000 levels, counting the two player ones. If shipwrecked with nothing but a solar generator and a CD equipped Amiga, this is most definitely one of the CDs I'd choose. Importantly, this disc works on CDTV, CD32, and all models of regular Amiga, quite an achievement with the generally temperamental Emerald Mine.

NetworkCD \$55

This 450Mb disc's aim in life is to instantly give you a load of

files useful for networking Amigas, along with a pile of other stuff.

You get a full bootable Workbench, Parnet set up ready to go, the older and clunkier SerNet, Terminus 2.0 (NOT Term, as the directory name and documentation suggest), TwinExpress (a very useful program to hook up Amiga and IBM for high speed DOS-like directory-aware transfers), Emit (a high speed null modem transfer program), ParNFS to beef up Parnet's file system, NetFS for TCP/IP equipped Amigas (not many), NComm 3.0, and a couple of PhotoCD image converters and a loader for ImageFX, OpalVision and PPM conversion.

For image format conversion, a useful thing for anyone networking to odd machines, you get the dated Wasp GIF converter, JPEG makers and viewers, the very useful Rend24 batch converter, a Targa converter and the nearly six year old PBMPPlus package which is of little interest to non-geeks.

You also get Fred Fish's public

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domain disks from 801 to 975; the library's moved on a bit since then but there's a lot of useful software on these discs, which are presented straight, with no annoying archiving. There's also AMOS PD disks 471 to 590, a subset of the AMOS CD (see below) contents. But wait, don't call yet, because you also get TBag disks one to 74, taking you right up to the heady days of 1990.

The Images directory contains 480 images in various categories, from Star Trek to famous people to the usual collections of pretty girls; all are 256 colour and all are quite elderly. All but a load of fractal pictures (rather nice) are 640 by 480, and are obviously old converted GIFs. Not crummy quality, just old; many carry dates around 1990. There are icon-driven slideshows for each of the 22 categories, which use ViewTek to display the pictures and so work on ECS and AGA machines - but look a lot better on AGA.

None of the stuff on NetworkCD is unique to it or especially well put together, but as a quick and dirty way to get any CD based Amiga hooked up to another machine by hook or by crook it's useful. It'd certainly take the average user a while to get all the networking software together, and all the rest is a nice bonus. Worth a look.

The Official AMOS PD Library CD \$49.95

From the same makers, the AMOS disc is indispensable for CD-ROM equipped AMOS programmers. More than 1600 source code files, 100 sprite banks, 250 CText banks, 800 samples, hours of music banks and tons more. Again, Workbench, SerNet and ParNet are included.

The 621 AMOS Disks on the CD (the library up to the 11th of July, 1994) can't run directly from it thanks to the enlightened system-compliant way AMOS

works (NOT!); users will have to get used to dumping files to floppy if they want to tinker with the the innumerable games and other programs. If you're not an AMOS user, this disc is not so attractive - a lot of the programs are very forgettable, and all the resource stuff is worthless to a non-programmer. But if you're into AMOS, you need this disc.

Multimedia Toolkit \$55

Another one from Weird Science, this contains over 10,000 files for use by people putting together Amiga based multimedia presentations. There are more than 500 good looking original pictures, all with 24 bit, HAM-8 and HAM-6 versions so users of any machine won't have to muck about with image conversion.

The categories are a bit odd, though; aircraft, birds, Britain, carnivores, classic cars, Corfu, Cornwall, females, fractals, London, males, mammals, Mansell (20 pictures all for him!), motorcycles, Minorca, paintings (Old Masters), places, Pompeii, racing (with yet more Mansell), reptiles, Venice, Vista Pro images and, of course, 17 pictures of those singularly photogenic chaps from the World Wrestling Federation.

You also get over 1300 colour clip art images and over 2100 mono (varying in quality from average to excellent), 120 ordinary bitmap fonts, more than 100 colour fonts, more than 100 Adobe fonts, 80 further Postscript and Compugraphic fonts and some scalable clip art in Pro Draw format. There are 750 alphabetically arranged SoundTracker modules, most lousy but some very good, and you also get more than 2300 categorically filed sound samples (some repeated and not all IFF format but generally useful), a lot of rather old icons, and utilities to view all the stuff. Simple, and a

massive space saver for people who are cramming their hard drives with miscellaneous gear in hopes that it'll come in handy.

Fractal Frenzy \$49

Here's a simple one. 2010 1024 by 768 256 colour fractal GIFs, all very nicely done, and the same files again only in 640 by 480 resolution. A few accompanying texts. Nothing more to say, really; if you like fractals (and can display 256 colour images; HAM6 conversion ain't that great), check it out.

Amiga Grafik CD 2 \$39

Another monster picture disc, this time stocked with IFFs of many and varied varieties, all 256 colour. The only thing they have in common is their file names all start with D, E, F or G, and they're arranged accordingly. Basic boot/ParNet gubbins is included.

Amiga Raytracing 1 and 2 \$69, \$69

Two discs for 3D image freaks. On the downside, they're both all in German. But they contain a load of resources for renderers; PD 3D objects, 3D fonts, textures, back-drop images of various scenes; specific support for LightWave, Real 3D 2.0, Imagine, Maxon Cinema, Caligari and Sculpt and DXF files. The second disk also contains animation reflection maps, 500 attributes for Imagine and the Maxon Cinema 4D demo. There are, of course, quite a few rendered images on the discs, but these aren't picture discs; they're aimed at people using rendering software. If you are, give them a good look.

CDPD IV \$55

The CDPD series is the cleaned up, better educated cousin of the disorganised Aminet discs (another Aminet will be coming

along Real SOon Now and I'll review it when it does). CDPD doesn't have such an eclectic collection of peculiar and wonderful files, but it's much better organised and the disks are much more complementary - when you get a new Aminet disc, it duplicates a lot of the files on earlier ones, as you'd expect it to because the Aminet discs are after all just snapshots of the Internet Aminet archive.

CDPD 4 is aimed at covering the areas the compilers didn't hit with previous CDPD discs. You get Fish disks 891 to 1000, with the KingFisher catalog system and indexes for all previous CDPDs. KingFisher 1.40 is supplied for most users, with 1.15 thrown in too because 1.40 explodes on CD32s, for some reason.

There's a load of Amiga-relevant text including excellent reviews and announcements from the relevant comp.sys.amiga Usenet areas, another batch of classic novels (all cut into 400k-odd chunks so you can view them on machines with 1Mb of RAM), Internet guides and documentation (including a quite recent version of the most excellent Jargon File which now runs to 1.4Mb and is presented in AmigaGuide format which makes it much friendlier), and among other text you also get most of Dan Barrett's Usenet humour, which is better experienced than explained.

Raytracers will be interested in the many data files on CDPD 4. You get objects, attributes, textures, utilities and reference manuals for Imagine, as well as a lot of very good raytraced images and animations, plus the PD raytracer Persistence of Vision set up and ready to go. CDPD4 also contains every edition of the AM/FM music disk magazine from issue 1 to 18, and all the special disks too. AM/FM contains a lot of sound modules, but also text on Amiga

and MIDI music, hardware reviews and so on.

The extra disks contain more modules, and also a lot of very good instrument samples. There are a lot of networking files, too. You get complete TCP/IP, SLIP and UUCP installations with full E-Mail, FTP, Telnet and UseNet News, with support utilities, and of course full ParNet and SerNet support.

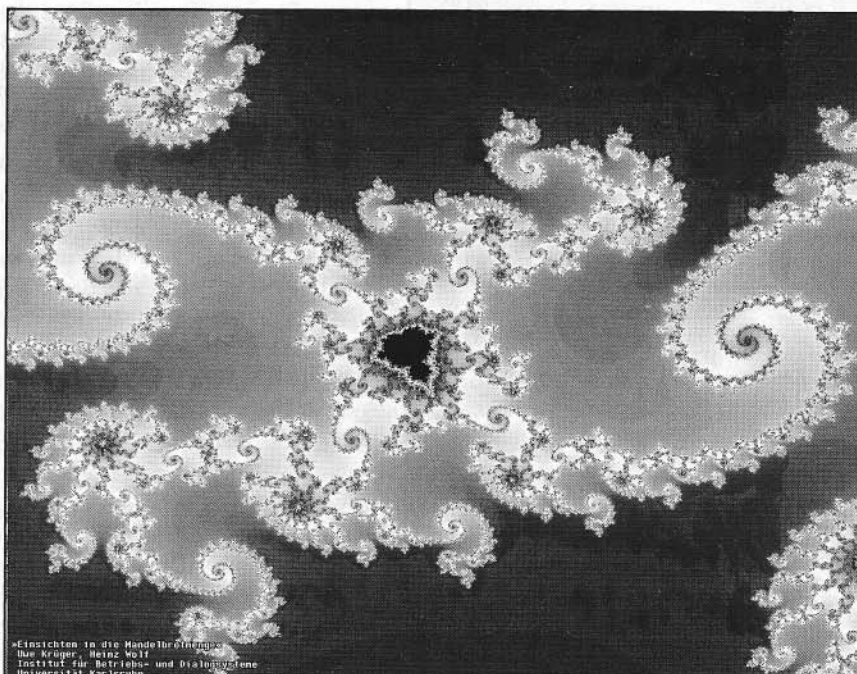
There are hundreds of shareware, freeware and PD Postscript and bitmap fonts, and also the complete PasTeX system, although without as much extra stuff as you get on the Meeting Pearls disc so it only (!) takes up 32Mb.

The complete GNU C Compiler v2.5.8 is included; this compiles C and C++ code and has a bunch of Unix-style utilities included and the official licensed CBM Includes and tools. There's also a complete installation of E, a much younger language than C but easier to learn. In case you don't know about the other CDPD discs,

CDPD1 contains Fish 1 to 660, a load of music modules and network support for ParNet and SerNet. CDPD2 has Fish 660-760, Scope PD Disks 1-220, some Just Amiga Monthly (JAM) disks, and assorted other freeware. CDPD3 contains Fish 760-890, clip art, fonts, books, utilities, applications and more.

Micro R&D CD-ROMs Vol 1 and 2 \$119.95, \$139.95

The Micro R&D discs have a wide assortment of files, too. Volume 1 of this series of two (so far) contains various animations, some so old as to have historical value, a few decent MODs, many OK sounds samples though nothing I haven't seen on other discs before, more books, including Stoker's Dracula, works by Oscar Wilde and many more, a few OK disk tools, almost 500 CompuGraphic fonts and almost 450 Postscript fonts, more than 1400 EPS clip art files, a collection of 3D rendering related tools, many game demos of



One of the Fractal Frenzy pictures.

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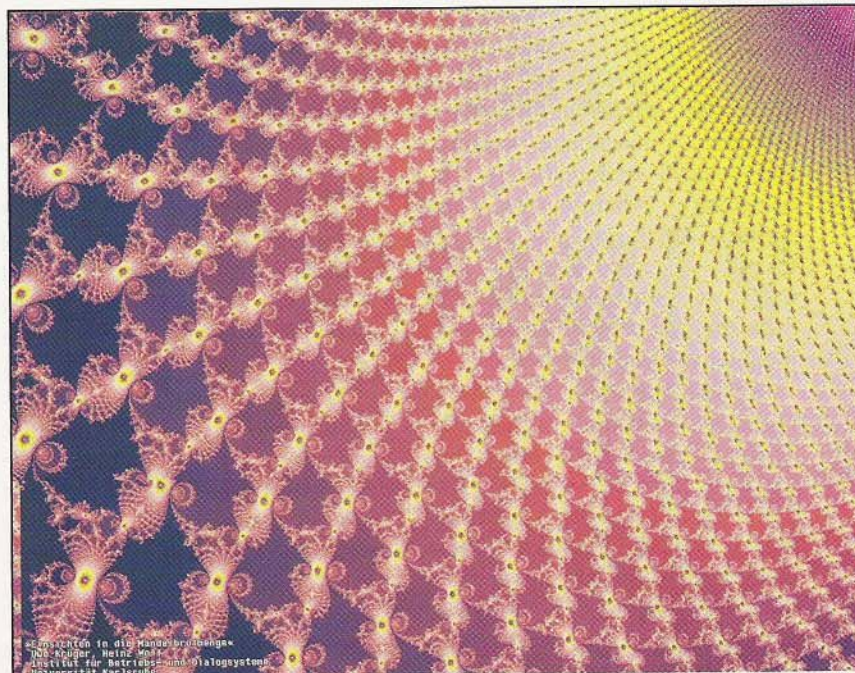
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Another Fractal

advanced age, a lot of game patches and hints including a 1992 ACAR hint disk (!), a lot of fairly dodgy old PD games, more than 200 generally very good GIF pictures of trains (if you're after train pics, this is the disc for you!), 344 other GIFs varying from the good to the awful, hardware hacking text and utilities, and many IFF pics. You also get the Transition image conversion package, which does file format conversion (IFF, GIF, JPEG, PCX, PBM, Windows and OS/2 BMP) and also basic image processing - and can do batch conversions.

The thing that struck me most about this CD (besides all those trains) was that a considerable proportion of its content was lifted from Aminet. Now, there's nothing wrong with that; the Aminet archive exists so that people can glom Amiga freeware easily. But this disc has a load of stuff taken directly from the Aminet March 1994 DISC, complete with the CD's FILES.BBS description

files! This, along with quite a few obvious duplicate files (something Aminet suffers from too) detract from this CD's appeal.

Micro R&D Volume 2 has a load of space pictures, which include just about everything on the Space & Astronomy disc with quite a few more.

You also get the entire collection of Nature's Backdrop pictures from Infinite Solutions, totalling more than 140 16 and 24 bit texture files and assorted brushes. These come in IFF, JPEG, GIF and TIFF format for maximum compatibility. Much less scope on this disc than in volume 1, and it's better for it; if you're after a load of textures this is a good place to look.

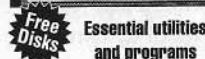
Thanks to Don Quixote (076) 331 561 and Amadeus (02) 652 2712 for supplying the discs in this comparison.

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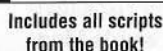
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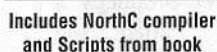
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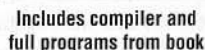
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Mastering AmigaDOS3 is the only complete A to Z guide to over 140 AmigaDOS commands, and is the established reference to the Amiga's DOS in 416 pages. Each command is documented through practical examples which introduce ideas for writing script programs. All entries are fully cross-referenced and indexed so the information you need is easily accessed in a jargon free manner. It contains details on Mountlist, Commodities, IFF, Viruses, AmigaDOS Error Codes and Multiview to name but a few. If your machine comes with AmigaDOS 2, 2.1 or 3 or you have just upgraded, exploit its power for your everyday computing needs with this essential title.

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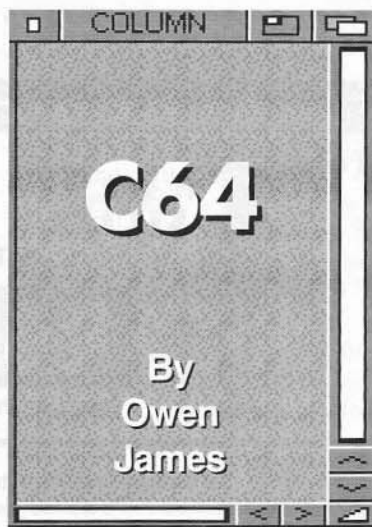


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► This month in The C64 Column I continue to look at the most frequently asked questions concerning the C64.

What's PD?

PD is short for Public Domain. In this context it refers to software without any copyright; this software may be freely copied and distributed amongst friends, contacts and customers, and may be modified by anyone with the skill to do so. There is a bit of confusion between true PD software and shareware. Software designated as shareware is similar to PD in that under normal circumstances it may be distributed freely, but the author generally keeps the copyright and may thus impose restrictions on how it may be copied, modified or used. Generally, also, shareware is the basis for a "try before you buy" system. If you enjoy using the software and regularly use it, the author asks for a contribution.

The C64 has a good supply of public domain and shareware software available for it, with material covering business, games, music and utilities. There are several PD and shareware suppliers in Australia willing to provide such software on disk for a small fee.

What's a null-modem cable?

A null-modem cable is, quite simply, a regular serial cable that

has been modified to allow data to be sent between two nearby computers. For example, if you have a C64 and an Amiga sitting side-by-side, or a C64 and a PC, or an Amstrad NC100 Notepad and an Amiga, they may be linked via a null-modem cable and data can be transferred between them. I'm writing this now on an Amstrad Notepad, and my article will be transferred to an Amiga via a null-modem cable when it's complete. It's useful for users with more than one computer.

To make use of a null-modem cable you'll usually require terminal (communications) software running on each machine, and each machine must have an RS232 (standard) serial port. Files are "uploaded" and "downloaded" just as you would with a regular modem.

What's GEOS?

GEOS has been the subject of many articles over the years, but for a quick recap, it's an acronym for Graphic Environment Operating System. GEOS is a replacement operating system designed to make using your C64 easier. Much like the Macintosh, Windows and Amiga Workbench, operations are performed using a mouse and a series of windows, rather than just the keyboard.

Included in the main GEOS system is geoWrite for word processing, geoPaint for graphics, and several desktop utilities including a calculator, notepad and clock. Add-on modules are available including a spreadsheet, desktop publisher and chart maker. Overall, the package is an excellent addition to your C64 software library.

Can I connect my C64 to a PC hard drive?

Surprisingly, yes. The software

package to do this is called 64Net, and to use it you have to build a special cable. Unfortunately the hard drive must also be connected to a PC, so forget any ideas of just buying a cheap IDE drive to dispense with your storage problems. The good news is that ANY PC drive may be accessed from the C64, including a CD-ROM drive - though not much CD-ROM software will be of use to a 64 user. Any PC, from a bargain basement \$50 XT, will suffice.

64Net comes in two flavours; the freely distributable version available on most BBSs or a commercial version. The difference is that the commercial version allows the user to write to the PC hard drive as well as read. Check your local BBS or PD software supplier for more information.

Can I use a modem with my 64?

You bet. These magical little boxes connect between your computer and telephone line, converting computer signals into tones and vice versa. "Modem" is actually a contraction of the words Modulation and Demodulation, which describes this process.

There was a time when modems designed specifically for the C64 were in abundance, but these days you'd probably only find them second-hand. A more practical alternative would be to use a standard modem, as used with an IBM or Amiga, and an interface unit. CMD produces a suitable interface, called the Swiftlink, which connects to your C64's cartridge port. The advantage of Swiftlink is that you can use modems that run at speeds of up to a respectable 9600 baud, thus reducing both online time and your telephone bill.

The second requirement is some form of communications software. For the C64, there's

quite a range to select from. The most popular amongst communications fanatics is NovaTerm, which is an easy to use, yet powerful, shareware offering. With the addition of a telephone socket, you should have everything needed to communicate with the outside world.

My printer won't work!

A common complaint, unfortunately with no simple answer. First and most obvious is to check that the printer was actually designed to work with the C64. Most modern off-the-shelf printers won't plug in directly. You may require an interface.

Second, try adjusting any interface and emulation switch settings. Many printers have a set of small toggle switches ("DIP switches")

for changing these settings.

Finally, check the printer driver itself. If using GEOS, ensure the correct printer driver has been selected. If you're using a printer that doesn't seem to correspond to any of the drivers, select the standard Commodore driver. Also, experiment with other printer drivers and emulation settings on the printer. Other software may not have such a wide selection of printer drivers, so just select the one that most closely matches your printer.

Just before we finish up this month, Sandra Kuchta would like to hear from any user willing to sell their old Xetec or Xetec Jnr printer interface. If you can help Sandra out, please write to her directly at 2 Dabee Rd, Kandos 2848. ☐

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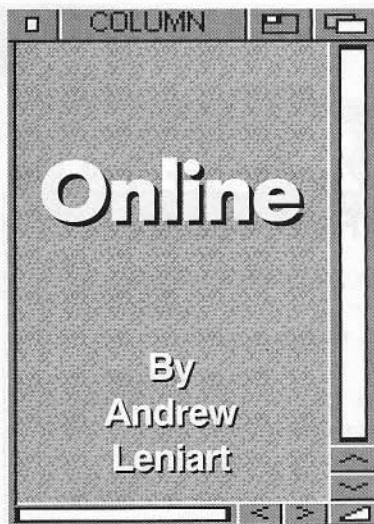
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► Welcome back to Online. Last month I pointed to MacInsanity as a great value for money Internet access provider. That was great news for Melbourne readers, but what of the rest of you?

As promised, this issue I'll be giving you information on yet another Internet provider with great access rates, that people in most other places should be able to benefit from as well. This issue also starts my series of articles explaining Internet for beginners. But first:

Commercial BBS roundup

To everyone that's been pleading for reviews of commercial BBS software, complaining about there being no way to try the things before you buy, here's what you've been waiting for.

I've approached the authors/support sites of the following commercial BBS software packages: MebbsNet, DLG Professional, XenoLink Pro, Excelsior BBS, Recon and CNet.

MebbsNet, Recon and Xenolink have already arrived and I'm told that the others are on the way, so next month will see the first reviews, starting with the popular Xenolink Pro and a different package reviewed each month after that. The reviews will appear as separate feature articles.

Dialix Internet Services

I searched far and wide for

many months, looking for an Internet access provider that gave good Internet access at a reasonable cost. Most providers I found were out of my price range, demanding high membership fees along with monthly charges and even a charge per minute of online time.

MacInsanity was great value, but I was also looking for a provider which I could pass on, that our readers all over Oz could benefit from. I believe I've found an excellent one and find myself using the Dialix service as much, if not more than my MacInsanity Internet account.

DIALix Services are currently a Net Service Affiliate Member of AARNet. AARNet is the body that supplies the backbone communications services to the academic and research communities in Australia.

DIALix offers e-mail and newsfeeds to individuals and small companies who are unable to obtain or afford a direct Internet connection. TELNET, IRC and FTP services etc, are now available at all sites listed below.

Users connect to DIALix through multiple dial up lines on 300/1200/2400 and 9600/14.4 modems to send and receive e-mail or browse newsgroups and post news items. Trunk callers are encouraged to ask about the cost of a trunk connection for e-mail, as 20k can be transferred for the cost of a local call at economy Telecom rates. UUCP feeds are especially catered for.

Modem numbers are:

Sydney (02) 948-6918
Melbourne (03) 562-2399
Canberra (06) 251-3811
Brisbane (07) 889-0799
Adelaide (08) 231-6822
Perth (09) 244-3233

The general public are actively sought to participate in reading

newsgroups, posting to local newsgroups and e-mailing other DIALix and/or Internet users. Clubs and organisations are catered for with special interest newsgroups and free login during club meeting hours (fortnightly or monthly).

Schools and special interest groups can even have their own newsgroup so members and staff can have a "customised" bulletin board without the need for a local person to maintain the equipment and service.

Net write access is provided to users who meet the requirements of the AVCC ("some benefit to the higher education and research sector"), with each applicant being considered on their merits. Users who have write access may have that access terminated at any time if they abuse the resources of the AARNet (or Internet). A commercial traffic service is now available between the major capital cities that does not use the AARNet backbone.

Charges for DIALix are:

- 1c/min online time.

- 1c/1,000 bytes for non-DIALix traffic in or out (AARNet/Internet). Usenet news in or out is NOT "byte" charged.

All accounts are paid in advance with a minimum of ten dollars.

Storage space of 1Mb provided with each account at no charge. Additional space at 1c/Mb/day.

- \$10 (once off) for UUCP setups.

- \$50 (once off) for TCP-IP/PPP setups (when available).

Visa, Bankcard and Mastercard are accepted via E-mail or phone. Cheques, etc. to the postal address given below. You can choose your own login name which is then unchangeable. It must be unique on DIALix and lower case letters and numbers beginning with a letter. Write to the address below or phone to arrange your login.

What's it all mean?

Basically, DIALix is a cheap and effective way to experiment and figure out what all this Internet stuff is about. I know of no other Internet provider that will allow you to establish an account of this type for a measly ten bucks, and then allow you to use all services immediately.

Most, as I said earlier, require an initial joining fee in the vicinity of \$50 and then sting you extra charges for online time and so on. I've no hesitation in personally recommending the DIALix service.

Since joining the service, I've found them to be prompt and professional in establishing an account for me and helping me to get started. I've also found that the support they provide for is absolutely excellent. To obtain support, you simply post an e-mail message to "support" from your DIALix account and ask your questions. Within 24 hours (sometimes even quicker) a reply is waiting for you.

DIALix can be reached via modem at the number given above, but you can also give Jeff Johnson a voice call (all hours) on (09) 244 2433 for more information. Alternatively, write to:

DIALix Services
P.O. Box 153
Doubleview 6018

IRC for beginners

Internet Relay Chat (or IRC for short) is a system which allows you to have conversations with other people all over the world via your computer keyboard.

To understand what this means, you can easily liken IRC to CB radio. It works on pretty much the same principle, except that you type on your computer rather than talk into a microphone. There are even different channels in IRC,

just like there are on a CB.

Type something on your computer and it's instantly relayed around the whole world to whoever happens to be on the same channel as you. There are literally hundreds of channels to choose from, each with its own designated topic, and you can create your own channel if you can't see one that interests you. Then simply invite others to join your channel, or just wait until people pop in.

There are channels on specific computer related topics, night-clubs, cars and many others. If you want to talk to others in a language other than English, there are channels for most languages.

A great way to make new friends and pen pals all over the world, chatting to them for hours and all for the price of a local call. There are literally hundreds of participants in IRC at any given time, so there are always many people to chat to.

Like card games? You can play poker on IRC as well, using pretend money and playing in real time against people from the USA, Germany, Finland, Japan and so on. Get the picture? It all happens via a programmed robot on the IRC called a "bot" and it's just like the real thing. Great fun!

How do you get it?

Nothing could be simpler. From the the prompt at a DIALix account, you simply type IRC and hit enter. The system takes care of the rest; within a few seconds you're in. Once in IRC, you'll naturally want to find out how to drive it all. Simply enter the following command when in IRC:

/help

and you'll get a list of IRC commands for which there is a

help file. You'll also get a topic: prompt. Type the subject or command you want to know about and hit enter again.

Two other IRC commands useful for the beginner are /LIST and /QUIT. Note that all IRC commands are preceded with a forward slash character.

/List gives you a list of all available and active channels. The list is likely to be HUGE, so turn on your terminal capture before issuing this command to ensure that you will be able to review the whole listing once it's done.

/QUIT ends your IRC session.

It probably all sounds harder than it really is, but I can assure you that once you've had a couple of goes you'll get the hang of it and before you know it, you're addicted.

A final word

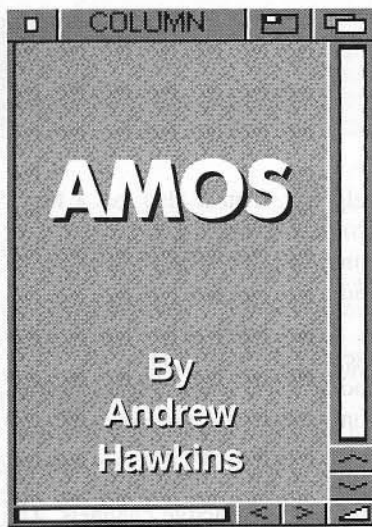
Before logging into ANY Internet service provider, ensure that you are using a terminal program on your end which is capable of VT100 or preferably VT102 terminal emulation. Other emulations are likely to cause display problems.

I've personally found the freeware comms package TERM version 4.1 to give excellent VT102 emulation and can recommend it.

That's about all I have space for this issue. Next month will see some more hints and tips for new Internet users about sending and receiving world wide Email, along with a possible review of the latest version of Foozle.

Till the next time, feel free to log onto my own BBS "Andy's Attic" on (03) 749-4897, or when you have your internet account, send Email to aleniart@ melbourne.dialix.oz.au and say hi.

□



It is surprising that there are so few AMOS 3D games out there. The main problem is that by the time you've got all the objects you need in your game, and you start checking every one to see if it fires and check for collisions and so on, there's so much overhead that the game chugs along at an embarrassingly slow rate.

So that's what this article is about - using AMOS 3D to build FAST 3D games. This is the first instalment of a four part tutorial, and at the end you will have the basic knowledge to continue to program optimised routines for AMOS 3D. You will also have a full game to play in the style of T-MEX, or for nostalgia fans, Battlezone.

Make sure you save the routines as you go.

Let's go

First of all, let's deal with the environment, or 3D world. Get some graph paper to work out what you want in a plan view something like Fig 1. The genre of this game is a Battlezone shoot-em-up, so we need one tank for the player and one for the opponent. To make matters simple, start with the tanks facing each other. Generally speaking, you want the action to take place in front of the player anyway.

Okay, now we have a basic plan. First, set up a screen to handle the 3D objects.

(See listing 1)

The first lines define variables for later in this tutorial. Next we open an AMOS 3D compatible screen and double buffer the display, effectively using twice the memory for a single screen but allowing smooth updating. Auto-back is set to 0. This sets any text to display at the fastest speed. TD SCREEN HEIGHT is set to 200, so that you can use the bottom of the screen for the score, radar and so on - it also increases the update speed. The next FOR/NEXT loop creates 10 ground dots for later.

Next you need to translate the planview to the computer. To do this, you must locate the 3D objects stored on disk and create object instances of them.

(See Listing 2)

The directory may change depending on where you've stored your objects. The basic format is:

```
Td Dir "<disk name>:<disk
drawer>"
```

The directory must point to the disk and drawer where the 3D objects are located or you'll get a "File not found" error. Also, when creating the object in the modeller you must save it to a drawer, not the root or parent directory, thanks to a bug in AMOS, so the statement should look like

```
Td Dir "Df1:ObjectDir"
```

TD LOAD will now load up the object descriptions. Don't have any objects? See the appendix at the end of this article to create the tank and the laser shot.

You will notice "bullet" is loaded as well. We'll use that later. TDOBJECT will create an instance of the tank, but it's not enough to just load the object, you have to put it into the game domain. This is a single instance

of the tank object, but you could have 20 tanks in the domain if you wanted. Let's just stick to one.

I guess you'll want to see the screen, so type:

(See Listing 3)

The REPEAT/UNTIL loop will loop forever. TD ANGLE REL refers to the object instance of the tank; it's a relative rotation, which means it will add 1000 VLU's (Voodoo Length Units) to object 1's B attitude every cycle, giving a smooth rotation to the tank.

TD REDRAW shows the picture of the tank. SCREEN SWAP will display the next refreshed frame of the tank rotating and WAIT VBL synchronises the drawing process so you get a smooth picture.

This is the basic MAIN loop. From here you will later jump to move the enemy tank, check the player's moves and so on. At this point I've introduced a lot of commands, and it may help to check your manuals to find out exactly what each command is doing.

For more speed you can purchase the TURBO extension for AMOS (available from Packtronics, and reviewed earlier this year). This is invaluable for 3D as it adds a lot more commands and reduces the processor time. If you have TURBO installed,

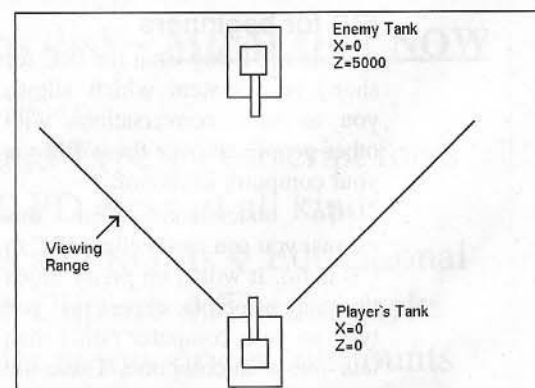


Figure 1.0 Using graph paper, make a plan view of where you want all your 3d objects. Then translate the coords to your program.

substitute WAIT VBL for VBL WAIT 200, as you only need to draw up to line 200 to see the tank. See the appendix to install TURBO.

Run the program now. You should see something like Fig. 2.0 on the screen, with the tank spinning around on one axis. If it isn't rotating horizontally, check the TD ANGLE REL 1 syntax.

The next thing you'll want to do is shoot the enemy tank, right? It's really easy to do this. You do several things to create a bullet object. In later tutorials I'll show you how to maximise the use of 3d calculations for sprites as bullets, but for now let's keep it simple. The basic technique is to create a 3D object at your position, point it straight ahead and move it.

Now we need to get into a bit of structured programming. Here's an example of is the way you should structure you program. Don't type this in, this is just a guide to the overall structure of the code.

(See Listing 4)

For the firing routine, you will make a procedure called FIRING _ ROUTINE. In it you need to check if the player has pressed fire, and if so initiate a bullet. Once the bullet is going you'll need to check it to switch it off when it's out of range.

First of all, include the procedure call FIRING _ ROUTINE after TDCLS, but before TD REDRAW in the REPEAT/UNTIL loop. This may be a little confusing for people who have no experience with procedures.

This is the basic syntax. When you call a procedure you just type in its name. So, in the next line after TD CLS, just type FIRING _ ROUTINE. Next you must define the routine and what it contains.

You do this by heading the routine with Procedure FIRING _

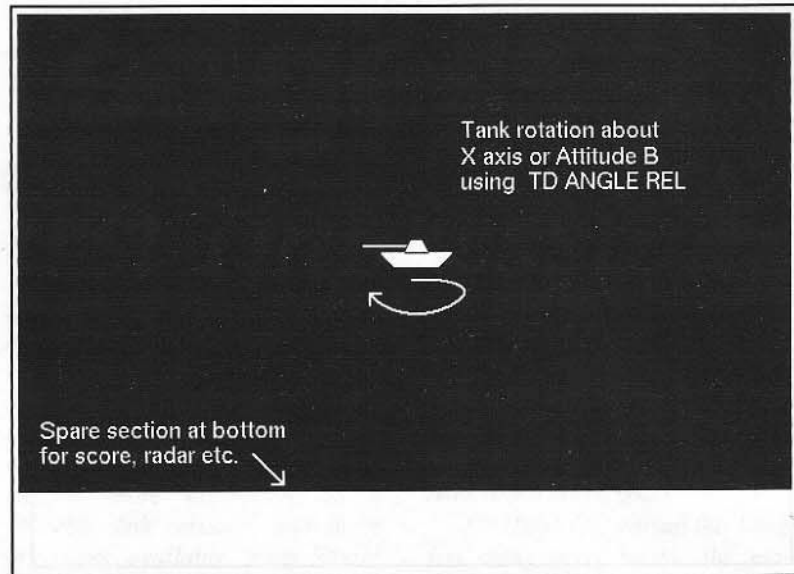


Figure 2.0 Running the program now, you should see the tank spinning around the horizontal axis X.

ROUTINE and typing in the contents. Once you have defined the routines in the procedure, you end it by typing ENDPROC last. Here's the routine, so you can start firing straight away:

(See Listing 5)

The first line is a calculation that will allow you to fire no matter which way the joystick is positioned. Next it checks a variable called BULLET for its status. Initially it will be set to 0 and will continue into the IF/END IF condition if the fire button is pressed. The bullet is switched on (BULLET=1) and a sound effect (SHOOT) is initiated (we'll change this later for a better sound). The TD OBJECT command as used before uses object 20 (this is important later on) and the object description is "laser2", stored with "turret" in your objects drawer. The bullet object is pointed straight ahead and all is set.

The next IF/END IF condition checks first whether the bullet is switched on. If so it moves the object forward 1000 VLU's. This is structured this way for two rea-

sons. Firstly, it stops you using object 20 more than once, which would result in an error, and secondly, it allows the object to continue to move once initiated. That's where INC BULLET comes in. The variable BULLET will increment until it is greater than 10, effectively giving a firing range of 10,000 VLU's.

At this point I'd like to tell you why you should use INC instead of BULLET=BULLET+1. INC uses internal registers for fast integer arithmetic. Other commands that use the same method of arithmetic are ADD and DEC, but we'll talk about those later. So the need for speed continues.

The next IF/END IF condition will switch off the bullet if it's out of range (ie BULLET exceeds 10), by switching variable BULLET to 0 and killing object 20.

Running the program now, you can fire a bullet, which will speed off toward the rotating tank. It doesn't hit the tank, though, because there's no collision detection routine yet.

After the procedure call FIR-

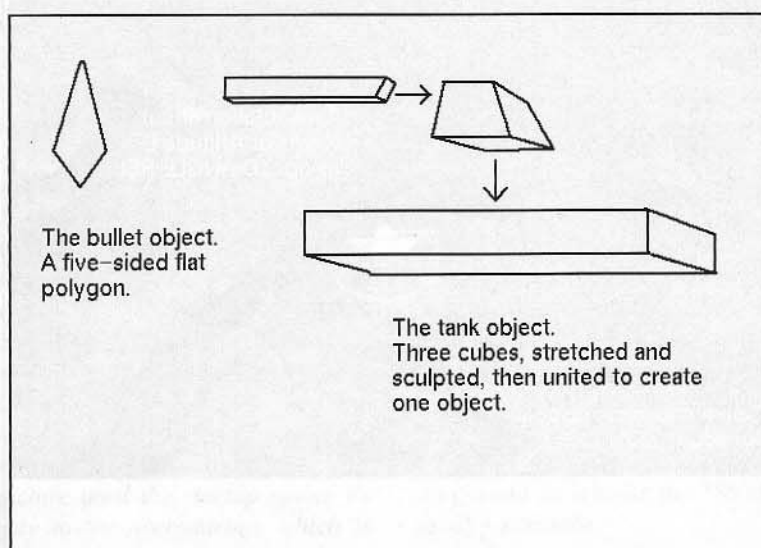


Figure 3.0 Using the Object modeller, it is easy to create objects for your game. More advanced user can create complex objects.

ING _ ROUTINE in the MAIN loop, type in the procedure call KOLLISIONS (K because Col is an AMOS instruction). Here's the KOLLISION routine. It's a little longer than the other procedure, so make sure the syntax is correct.

(See Listing 6)

Now things are starting to get interesting. The first IF/END IF condition checks to see if the bullet's been fired (BULLET=1), and this condition avoids error with the next command, TD RANGE, which checks the proximity of the bullet to the enemy tank. I've set it to 500.

This is quite a large hit area, but it's really set for playability, and also to stop the bullet from passing through the tank as it's travelling quite fast. Variable _ KILL _ TANK is switched on so that it can use the other features of the procedure. Variable BULLET is switched off and object 20 is killed so that the player can fire again.

From there it POP PROCs. Why? The need for speed. Don't worry; the next cycle it will blow

the object up, but when it comes to nanosecond timing you don't really need it. The strategy for speed here is to make sure the CPU has very little to think about per cycle, because the 3D objects take a long time to draw anyway.

When you think about it, it makes sense. Who cares if the tank explodes 5 VBLs later than when it was hit; this is only a tenth of a second!

The next IF/END IF condition is effected the next cycle round, but because _ KILL _ TANK is now set to 1, the first range test is ignored (speed again). BOOM is a sound effect (we'll change this later) and the next 3 lines are interrupt strings to animate the tank.

The first TD MOVE Y has five parts to the animation. The first part sends it up quite quickly, the second slows down, the third starts going down, and the fourth and fifth speed it up before it hits the floor, giving a realistic gravity effect.

The next two TD ANGLE strings rotate the tank, and are relative moves so the tank appears to tumble as it goes up, then down.

So what you'll see is the tank being thrown into the air when you shoot it.

Finally, _ KILL _ TANK is INCed and the routine POP PROCs. This is a speed strategy. By using the interrupt strings on 3D objects, you can be checking other things in the game while the CPU is animating the object. The need for speed continues.

The final IF/END IF condition in the KOLLISIONS procedure ignores the first two conditions (range testing and animation) because in the next cycle, _ KILL _ TANK is set to 2. Like the bullet object, _ KILL _ TANK is incremented to allow time for the tank to move. The next IF/END IF condition waits for another 8 cycles before killing the tank. When _ KILL _ TANK exceeds 10, it will create a sound effect and initialise a new tank. _ KILL _ TANK is then reset to 0 so that the KOLLISION routines are ignored. Using TDOBJECT a new object instance of the tank is generated, and the last three TD commands initialise the animation strings so that the tank no longer tumbles.

Running the program now you can kill tanks forever; this is fast and fun but offers little variety. Before spicing things up, let's check your structure. FOLD ALL of your procedures (Left ALT + F8). Your program should look like this.

(See Listing 7)

Nice and neat and easy to read. Now two more procedures to spice things up; one to move the enemy tank and one to move the player's tank. First, let's move the enemy. Include the procedure call MOVE_TANK after KOLLISIONS in the MAIN loop, and type in the procedure below.

(See Listing 8)

Figure 4.0

The first line aborts the procedure if the tank is being destroyed (ie. `_KILL_TANK>0`). The next two lines load variables OX and OZ with the position of the tank in the game domain. The following line randomizes a number between 0 and 10, effectively giving the tank an 60% chance of moving.

Note that the following two lines, OX and OZ range testing, are separate. Why? You guessed it, speed. A complete one line command incorporating the randomizer, OX and OZ range testing would take too long to process every cycle.

It is designed like this so that if at any point the condition is false it will stop processing the condition. Separating them stops the testing early and wastes the minimum amount of time.

If all the conditions are true it will move the tank and then POP PROC out of the routine. The range testing is designed to make sure the tank stays somewhere in front of the player, but it can move left and right a small distance. This makes the tank difficult to target, but it tank stays in visible range.

Running the program now, you will see the tank moving around in front of the player's tank, but the only time you can shoot it is when it is directly ahead. So you need to be able to move the player's viewpoint.

Include the procedure call `MOVE_PLAYER` before `FIRING_ROUTINE` in the MAIN loop and key-in the following procedure. (Fig 5.0)

(See Listing 9)

The first instruction tests the joystick once and loads the value into the variable J. The first IF/END IF condition tests a number of combinations of joystick positions, with a bias towards the left position to add

playability. If the joystick has a left bias the viewpoint's (object 0) attitude or angle is adjusted anti-clockwise by 100 VLU's. Next, the attitude of the viewpoint is loaded into variable BP.

The following range test with BP makes sure the player can only turn 40 degrees left of centre. If the player's tank turns beyond 320 degrees the tank is stopped at that angle and set with TD ANGLE. This is for playability, and keeps the enemy tank in view. From here it POP PROCs, because the rest of the routine should be ignored.

The next IF/END IF condition tests a number of joystick positions with a bias to the right joystick position, and will turn your tank clockwise 100 VLU's per cycle. Again there is a range test to make sure the player can only turn to 40 degrees to keep the enemy in view.

Running the program now, you can move left and right and fire at the randomly moving tank. At the last moment I decided to add a ground detail routine, so that you could get a sense of depth and position. Include the procedure call `GROUND` after `TD REDRAW` in the MAIN loop and key-in the following:

(See Listing 10)

Running the program now, you'll have a rough guide as to where the ground is and a true indication of your movements.

Well that's it for this tutorial; I hope you're enjoying making 3D games so far. Next edition I'll get more into making a game out of the routines, to include a radar, score, intelligent enemies and much more. If you have a compiler, compile this week's routines and check out that speed!

Creating the tank and bullet objects

The bullet object is a flat

polygon and is easy to create. First load up OM (object modeller) and have a disk ready with a directory to save the object to. You'll need the OM reference card for this. Click means left mouse button. RMB is right. System shelf is the top row of objects, user shelf is the row below this and left and right windows are the big editing areas below the user shelf.

1. Click on RESET OM and click on the tick. Click on the left window, highlighting it. Click on the five pointed object. Click on the left window. Click on COPY tool (see reference card).

2. Click on ZOOM. Click on ADD BLOCK TO GROUP. Points should appear.

3. Click and drag the HORIZONTAL STRETCH tool to make the object about 2-3cm wide onscreen.

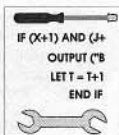
4. Click on POINT (block level commands) to select the top left point on the object. Click and hold on the top of the PULL TOOL in the block level commands (you should see an equation onscreen). Now drag left until the selected point is moved to the centre of the top of the object.

5. Click on POINT to select the top right point. Click on the PULL TOOL at the top and drag right until the point is moved to the centre of the top of the object.

6. Click on the FACE tool (block level commands). You won't see the object change with flat objects, but be assured that the face you can see is the face selected. RMB on XZ tool next to ZOOM, and the object will change its orientation.

7. RMB on PRECEDENCE/CULLING tool.

8. RMB on FILE/QUICK tool. You will now see the file access window. Click on the top window, which should read "OM:OM". Backspace over this and change it to the name of your save directory



PROGRAMMING

and press return. The directory will appear below left. Click on the right window below the directory name and type in BULLET.

9. Click on the OBJECT to DISK icon (this is a square with an arrow pointing to a disk). Your object is now saved.

Creating the tank

This is a little more complex. The basic design of the tank is an elongated and flattened cube as the base, a trapezoid sculpted smaller cube for the turret, and an elongated thin cube with the end angled so that it fits neatly onto the turret, which is the barrel.

Creating the base

1. Click RESET and click on the tick.

2. Click on the left window to highlight it. Click on CUBE (rightmost object on the system shelf). Click on left window. Click COPY.

3. Click ZOOM. Click on ADD BLOCK TO GROUP. The cube's points will be highlighted.

4. Click and hold VERTICAL STRETCH, and shrink the cube so that it is about 1-1.5 cm onscreen.

5. Click the FACE tool (block level commands) to select facing surface. Click the XZ tool (next to ZOOM). You should see the top of the cube.

6. Click and hold the VERTICAL STRETCH tool and shrink the top so that it makes an elongated cube. This is the base, so imagine the tank is facing left and you are looking down on it, and size it accordingly. It should be about 3-4cm high.

7. Click ZOOM. Click on leftmost USER SHELF and click COPY. You should have a copy of the base in the USER SHELF now.

Creating the turret

8. Repeat steps 2 to 6, except the turret must be smaller than the base, so at step 6 make it about 2.5-3cm high.

9. Click and hold the HORIZONTAL STRETCH tool and shrink the sides of the cube so it looks square.

10. Click and hold the ROTATION TOOL (movement tools) and drag down until you can see the top and front surfaces of the cube.

11. Click and hold the ROTATION TOOL and drag left until you can see the top, left side and front surfaces.

12. Click on the FACE tool to select the left side surface. Double click on the LINE tool (block level commands) to select the left side's top line.

13. Click and hold the PULL TOOL at the very top (the equation should start with "1:") and drag up until the last part of the equation is 25. The top line of the left side surface should now angle back.

14. Double click FACE to select the front surface. Click LINE to select the front surface's top line.

15. Click and hold the top of the PULL TOOL, pushing up until the end of the equation reads 25. The front surface should angle back now.

16. Click and hold the ROTATION TOOL and drag up, until you can only see the left and front surfaces. RELEASE Click. Click and hold the ROTATION TOOL and drag right until you can see the right surface.

17. Click FACE to select the right surface. Click LINE to select the right surface's top line.

18. Click and hold the very top of the PULL TOOL and push up until the last part of the equation is 25. The right surface should now

be angled back.

19. Click and hold the ROTATION TOOL and drag right until you can see the back surface.

20. Click on FACE to select the back surface. Click on LINE tool to select the top line.

21. Click and hold the very top of PULL TOOL and drag up until the last part of the equation is 25. Now all surfaces should be angled back.

22. Click on ZOOM tool. Click on 2nd left most user shelf. Click on COPY. You should have a copy of the turret next to the copy of the base.

Creating the barrel

23. Repeat step 2 and 3.

24. Click and hold the VERTICAL STRETCH tool until the cube is very thin, about 3-4mm onscreen.

25. Click on FACE tool. Click on XZ tool next to ZOOM. Click and hold the VERTICAL STRETCH tool until cube is extremely thin and long. This is the shape of the barrel.

26. Click and hold the ROTATION tool and drag so that the end of the barrel is facing you.

27. Click FACE to select this end. Click LINE to select this end's top line.

28. Click and hold the very top of the PULL TOOL and drag down until the equation ends in 15.

29. Click ZOOM. Click on the third left user shelf and click COPY. You should now have a copy of the base, turret and barrel ready to paste together.

Sticking it together

30. Click on the leftmost user shelf, the base. Click on left window. Click on COPY. The base will be in the left window now.

31. Click on FACE until the facing surface is selected.

32. Click the second leftmost user shelf. Click the right window. Click COPY. You should have a copy of the turret in the right window. Click ZOOM and click FACE to select the facing surface of the turret. Note you must select the wide bottom, not the apex. Click ZOOM.

33. Click the right window. Click the left window. Click UNITE. Click PRECEDENCE. In the left window you should now see the turret on top of the base.

34. Click the third left user shelf. Click the right window. Click COPY. You should now have a copy of the barrel in the right window.

35. Click ZOOM. Click and hold the ROTATION TOOL and drag right until you can see the angled end facing you. Click FACE tool to select this face. Click ZOOM.

36. Click the left window. Click ZOOM. Click BLOCK (block level commands) to select the turret. Click FACE until the left surface of the turret (looking down) is highlighted. Click ZOOM.

37. Click the right window. Click the left window. Click UNITE. Click PRECEDENCE. You should see the tank with the turret and the barrel, but the barrel sticks out at a weird angle.

38. Click ZOOM.

39. Click and hold the ROTATION TOOL and drag up so you can see the tank side on. Click and drag the ROTATION TOOL left until the tank faces you square on. Click BLOCK to select the barrel.

40. Click ADD BLOCK TO GROUP to select the barrel's points. Click BLOCK to select the turret. Click FACE to select the turret's facing surface.

41. The idea of the next step is to rotate the barrel so it points toward you but ends up off centre of the turret. Try one of these two

methods if the barrel doesn't point towards you; click and hold the FACE ROTATION tool in the groups section and either drag right until the barrel is off left but pointing ahead, or drag left until the barrel is off right but pointing ahead.

42. Click and hold the FACE SLIDE tool and drag right or left so the barrel's in the centre, but at the top of the turret.

43. Click and hold the FACE NORMAL tool and drag left until the barrel is in the centre of the face of the turret.

44. Click and hold the ROTATIONTOOL and rotate the tank until it is facing to the left but square.

45. Click and hold the AXIS ROTATION in groups tools and drag right until the barrel is squared and pointing left.

46. Click and hold MOVE XY PLANE in groups tools and drag the barrel left until its end touches the left side of the turret.

47. Click PRECEDENCE. RMB on PRECEDENCE. Click and hold the ROTATION TOOL and drag until the tank faces away from you but is square.

48. RMB on FILE/QUICK tool. Click "OM:OM" if it doesn't contain the name of your save directory then change it to the right path and press return. Click on the file window to the right of the directory and type in TANK. Click on OBJECT to DISK to save tank. This icon is the square with the arrow pointing to the disk.

Well done. You have made your own tank and bullet. These are very simple, but with this knowledge I'm sure you could create some very convincing looking objects.

APPENDIX B Installing TURBO 1.75 extension for AMOS.

First, purchase the extension

from Pactronics; it costs about \$5. Reboot your Amiga and insert the TURBO update disk. Follow the on screen instructions to install the extension on your language disk. Don't use your originals, make backups.

Reboot and load up AMOS and then load the CONFIG1_3. amos program. Run this. Select load default configuration from the menus. Select LOADED EXTENSIONS MENU. Move the mouse down to line 8, click on it and type in :AMOS _ SYSTEM TURBO.LIB and press return. Select quit from this screen and then select SAVE CONFIGURATION. Once it has saved and the disk light goes out, reboot your AMIGA. When AMOS boots up, in the list of extensions you should have at the bottom TURBO EXTENSION 1.75.

□

```
Dim GND(10,2)
Global GND()
Global _ KILL _ TANK
Global BULLET
Screen Open 0,320,256,16,Lowres
Double Buffer
Autoback 0
Td Screen Height 200
For P=1 To 10
  GND(P,0)=5000-Rnd(10000)
  GND(P,1)=-200
  GND(P,2)=1000+Rnd(10000)
Next P
```

Listing 1

```
Td Dir "df1:objects"
Td Load "tank"
Td Load "bullet"
Td Object 1,"tank",0,0,5000,0,0,0
```

Listing 2

```
MAIN:
Repeat
  Td Cls
  Td Angle Rel 1,0,1000,0
  Td Redraw
  Screen Swap
  Wait Vbl
Until GAME=1
End
```

Listing 3


```

DIM <variables>
GLOBAL <variables>
Repeat
    Procedure calls
Until
End
Procedure Xn
Procedure Xnl
...

```

Listing 4

```

Procedure FIRING_ROUTINE
    If Joy(1)-16>-1
        If BULLET=0
            BULLET=1 : Shoot
            Td Object 20,"bullet",0,0,0,0,0,0
            Td Angle 20,0,Td Attitude B(0),0
        End If
    End If
    If BULLET>0
        Td Forward 20,1000
        Inc BULLET
        If BULLET>10
            BULLET=0
            Td Kill 20
        End If
    End If
End Proc

```

Listing 5

```

Dim GND(10,2)
Global GND()
Global _KILL_TANK
Global BULLET
Screen Open 0,320,256,16,Lowres
Double Buffer
Autoback 0
Td Screen Height 200
Td Dir "df1:objects"
Td Load "tank"
Td Load "bullet"
Td Object 1,"tank",0,0,5000,0,0,0
For P=1 To 10
    GND(P,0)=5000-Rnd(10000)
    GND(P,1)=-200
    GND(P,2)=1000+Rnd(10000)
Next P
MAIN:
Repeat
    Td Cls
    FIRING_ROUTINE
    KOLLISIONS
    Td Angle Rel 1,0,1000,0
    Td Redraw
    Screen Swap
    Wait Vbl
Until GAME=1
End
Procedure FIRING_ROUTINE
Procedure KOLLISIONS

```

Listing 10

```

Procedure GROUND
    For P=1 To 10
        SX=Td Screen X(GND(P,0),GND(P,1),GND(P,2))
        SY=Td Screen Y
        If SX>-1 and SY>-1
            F Plot SX,SY,1
        End If
    Next P
End Proc

```

```

Procedure KOLLISIONS
    If BULLET>0 and _KILL_TANK=0
        If Td Range(20,1)<500
            _KILL_TANK=1
            BULLET=0
            Td Kill 20 : Pop Proc
        End If
    End If
    If _KILL_TANK=1
        Boom
        Td Move Y 1,"(1,100,5)(1,50,5) (1,-20,3)(1,-50,3)(1,-150,5)"
        Td Angle A 1,"(1,1000,25)"
        Td Angle B 1,"(1,500,25)"
        Inc _KILL_TANK : Pop Proc
    End If
    If _KILL_TANK>1
        Inc _KILL_TANK
        If _KILL_TANK>25
            Boom : Td Kill 1
            _KILL_TANK=0
            Td Object 1,"tank",3000-Rnd(6000),0,5000+Rnd(2000),0,0,0
            Td Move Y 1,"(0,0,0)"
            Td Angle A 1,"(0,0,0)"
            Td Angle B 1,"(0,0,0)"
        End If
    End If
End Proc

```

Listing 6

```

Procedure MOVE_TANK
    If _KILL_TANK>0 Then Pop Proc
    OX=Td Position X(1)
    OZ=Td Position Z(1)
    If Rnd(10)<6
        If OX>-30000 and OX<30000
            If OZ>1000 and OZ<50000
                Td Forward 1,100
                Pop Proc
            End If
        End If
    End If
End Proc

```

Listing 8

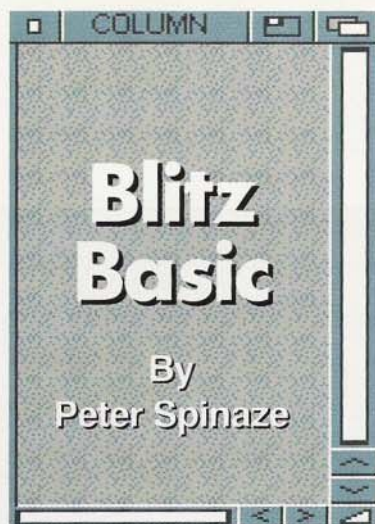
```

Procedure MOVE_PLAYER
    J=Joy(1)
    If(J>3 and J<8) or(J>19 and J<24)
        Td Angle Rel 0,0,-100,0
        BP=Td Attitude B(0)
        If BP>180*182 and BP<320*182
            BP=320*182
            Td Angle 0,0,BP,0
            Pop Proc
        End If
    End If
    If(J>7 and J<11) or(J>23 and J<28)
        Td Angle Rel 0,0,100,0
        BP=Td Attitude B(0)
        If BP<180*182 and BP>40*182
            BP=40*182
            Td Angle 0,0,BP,0
            Pop Proc
        End If
    End If
End Proc

```

Listing 9





A-Maze-ing Recursion

Welcome Blitz Coders! The Blitz Column is back on the air after a brief respite. In future articles, I'll be splitting the action into two separate columns. In response to the many letters from people with little or no experience in programming, I'll be running a monthly tutorial for beginners. But fear not, intermediate and advanced programmers! I'll still be passing on some interesting ideas and tips each month to improve your code. This month I'm giving you something meaty to bite into, an application showing the power and eloquence of recursive programming.

What is recursion?

Simply put, recursion is what happens when a piece of code calls itself. In Blitz, functions and statements are fully recursive, which means they can call themselves. You can't do this with normal code, so any recursive code should be within a function or statement (from now on, when I say function, I mean statement or function).

Recursion is used for many things; sorting, searching and examining lists, arrays and lumps of data. In this example it will help us find the shortest way out of a maze.

I read in a programming textbook once that anything you can do using recursion you can also do

using normal control loops and re-iteration. Whether or not that's true I can't say, but it's hard to imagine the code looking as neat or as eloquent.

Obviously, for recursion to be useful, there has to be an external method to stop the function calling itself until the end of time or the three finger Armageddon. In this example, this external control comes in the form of global variables.

Local and global variables

Inside functions, all the variables used are called "local" variables. This means that they are completely separate from all the variables outside the functions; they are "local" to the function. That means that the variable *x* is completely independent of the *x* in your main body of code. In fact, you might use the same variable name *x* hundreds of different times in your program listing, and Blitz keeps them all separate for you outside of the functions they live

in. You can, however, change this system, and tell Blitz to use the same variable both inside and outside the function. This variable is then called a "global" variable. The command for this is the "shared" command, and an example of making the *x* variable global is to declare it "shared" at the start of the function's code, like this:

```
Function DRAWMAP {tx,ty}
```

```
Shared x,y,map()
WLocate tx,ty
Nprint Map(x,y)
```

```
End function
```

Note that you can pass a complete array as a global variable by naming it and putting empty brackets after the variable name. This tells Blitz you want the whole array to be shared between the function and the rest of your code external to the function.

Without further ado, here's this

```
File: ACAR.bb
DEFTYPE,I
MOGLI
Dim map.b(26,20)
Dim scan.b(26,20)
Dim scanvector.w(26,20)

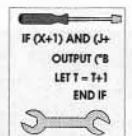
Screen 0,11
Window 0,0,10,640,240,51800,"",1,0
: create map 26x20 blocks, each block 24x12 pixels
For x=0 To 25
  For y=0 To 19
    If Rnd(0,8)>5 Then map(x,y)=1
    HBox x*24,y*12,x*24+23,y*12+11,map(x,y)
  Next
Next

:selectstart
WTitle "", "Select Starting block "
ClickMouse
x=MMouseX/24:y=MMouseY/12
If map(x,y)=1 Then DisplayBeep_0 : Goto selectstart
HBox x*24,y*12,x*24+23,y*12+11,3
sx=x:sy=y

:selectfinnish
WTitle "", "Select finishing block"
ClickMouse
x=MMouseX/24:y=MMouseY/12
If map(x,y)=1 OR (x=sx AND y=sy) Then DisplayBeep_0 : Goto selectfinnish
HBox x*24,y*12,x*24+23,y*12+11,3
fx=x:fy=y

WTitle "", "Looking at maze..."

Line:1 Column:39 Largest Mem (K):2167
```

Listing 1

DEFTYPE.1

NoCli

```
Dim map.b(26,20)
Dim scan.b(26,20)
Dim scanvector.w(26,20)
```

```
Screen 0,11
Window 0,0,10,640,240,$1800,"",1,0
```

```

; Create map 26*20 Blocks, each block 24*12 pixels
For x=0 To 25
  For y=0 To 19
    If RRnd(0,8)>5 Then map(x,y)=1
    WBox x*24,y*12,x*24+23,y*12+11,map(x,y)
  Next
Next
Next

```

```
.selectstart
WTitle "","Select Starting block  "
ClickMouse
x=WMouseX/24 : y=WMouseY/12
If map(x,y)=1 Then DisplayBeep_ : Goto selectstart
WBox x*24,y*12,x*24+23,y*12+11,3
sx=x : sy=y
```

```
.selectfinish
WTitle "", "Select finishing block"
ClickMouse
x=WMouseX/24 : y=WMouseY/12
If map(x,y)=1 OR (x=sx AND y=sy) Then DisplayBeep_ : Goto selectfinish
WBox x*24,y*12,x*24+23,y*12+11,3
fx=x : fy=y
```

```
WTitle "", "Looking at maze..."
```

```
For x=0 To 25 : For y=0 To 19 : scan(x,y)=100 : Next : Next
```

Statement SCAN {x,y}

SHARED scan(), scanvector(), map()

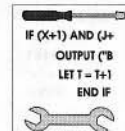
```
; checks adjacent four squares for better path
```

$$c = \text{scan}(x, y) + 1$$

```

If y>0
  If map(x,y-1)=0
    If c<scan(x,y-1)
      scan(x,y-1)=c : scanvector(x,y-1)=x*100+y
      SCAN {x,y-1}
    End If
  End If
End If

```

PROGRAMMING

```
If y<19
  If map(x,y+1)=0
    If c<scan(x,y+1)
      scan(x,y+1)=c : scanvector(x,y+1)=x*100+y
      SCAN {x,y+1}
    End If
  End If
End If

If x>0
  If map(x-1,y)=0
    If c<scan(x-1,y)
      scan(x-1,y)=c : scanvector(x-1,y)=x*100+y
      SCAN {x-1,y}
    End If
  End If
End If

If x<25
  If map(x+1,y)=0
  If c<scan(x+1,y)
scan(x+1,y)=c : scanvector(x+1,y)=x*100+y
SCAN {x+1,y}
End If
End If
End If

End Statement

scan(sx,sy)=0
SCAN {sx,sy}

cost=scan(fx,fy) : WTitle "", "Shortest Cost="+Str$(cost)

If cost<100
  x=fx : y=fy
  While x<>sx OR y<>sy

    WBox x*24,y*12,x*24+23,y*12+11,3
    WLocate x*24+4,y*12+3 : Print Str$(scan(x,y))

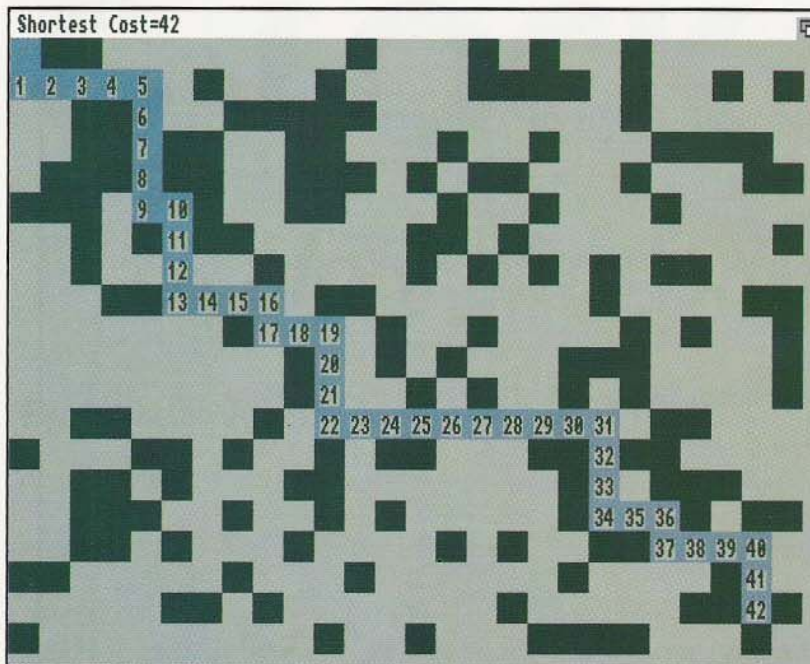
    v=scanvector(x,y)

    x=v/100 : y=v MOD 100

    Delay_ 15

  Wend
End If

While Joyb(0)<>2 : Delay_ 1 : Wend
End
```

month's example program, ready for you to type in and run.
(See Listing 1)

Explanation

The program starts by defining all variables as long types (4 byte integers). A NoCli command is issued to tell Blitz not to open its default window, since we will be opening our own Intuition screen and window.

Next, the three main data arrays are dimensioned. Map() holds the data for the maze (1 means wall, 0 means open space). Scan() and Scanvector() are going to be used to hold the scanned information about the paths through the maze - more about that later.

Now the program opens a hires 8 colour screen, and a full sized window to draw the maze graphics onto. A simple series of For...Next loops creates a basic maze. I know there are better ways to create a maze, but not in a few short lines of code, OK? A random series of blocks is scattered throughout the maze, a 1 being stored in the array to represent a block, and the maze is drawn as it is created. Selectstart

and selectfinish are two identical segments of code to prompt the user to select a block to start and finish any path through the maze. Some error checking makes sure two valid squares are selected.

Now we come to the business end of the code. The function Scan {x,y} recursively calls itself given a starting coordinate. The purpose of Scan{} is to create a map of valid movement vectors throughout the accessible areas of the maze, originating from the given starting location.

Starting at the first square, Scan{} checks each square around it, up, down, left and right, to see if the cost (in moves) to get there is lower than the cost already stored there. Each square Scan {} moves from the starting position, it adds one to its internal move counter, so that it always knows how many moves it took to get to any given square in the maze.

Scan(x,y) holds the cost in moves to go from the starting square to this square. ScanVector(x,y) holds the square from which Scan entered this square in its search, in the format x*100+y

so that we can store two coordinates in the one variable. It's important to store the path or vector used to get to the square, since you don't only want to know the smallest amount of moves to get to the square, but also the path to follow (Electronic breadcrumbs in a virtual maze?).

You'll notice Scan() is initialised to 100 moves for each square, so the program can determine whether valid paths exist to certain squares. If the cost is 100, then Scan{} never made it to this square.

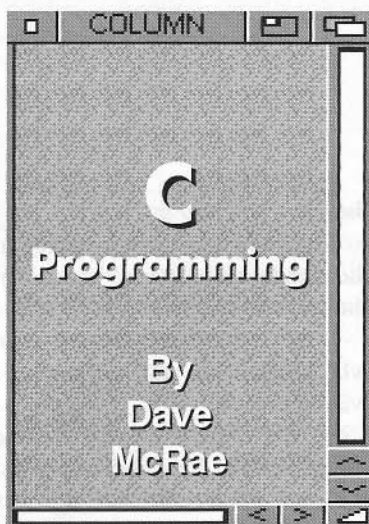
So the Scan{} function spreads out through the maze, checking all adjacent squares to see if the current path being followed can get to a given square in a shorter number of moves than is currently stored in the data arrays. As it checks each adjacent square, it calls itself again and again to check each of those adjacent squares.

This could go on for ever, were it not limited by the borders of the maze. If Scan{} strikes a border square, it doesn't continue to recurse in that direction.

After Scan{} has finished with the maze, the shortest point between the two squares can be looked up in the location of the ending square, and the shortest path followed backwards to the origin square using the information stored in Scanvector(). The final piece of code just displays this path and counts down the squares along the escape route. Hit the right mouse button to exit the program.

This concludes this month's tutorial. I hope the more experienced coders found it refreshing to have a tutorial aimed at their level. Next month I'll start the beginners' column, so if you didn't quite follow this month's example program, hang in there! Blitz on!

□



Inter-Process Communications

Hi there, and welcome to another excursion into C programming on the Amiga. Last time we had a butcher's at tasks and how to display various parameters associated with them. This month it gets even more arcane!

Inter-Process Communications and, in particular, message passing are important aspects of the Amiga's operating system. Message ports are the rendezvous point for messages. Devices require a message port to inform a task when a command has completed. This could be a read or write to disk, for example. When the command has completed, the device posts a message to the message port for the task. Once the message has been received, it should be replied to by the task. This lets the device know the message has been received and that the device can now safely reuse the message.

OK, so what does this program do? Well first off, this is an unusual program in that it has dual personalities. It's a case of "Roses are red, violets are blue, I'm schizophrenic and so am I".

The first time you execute this program, it installs itself as a receiver and waits for a message. All invocations after this will take the argument supplied and send it to the receiver, where it will be printed. If the first four letters of the message spell "QUIT" (no quotes,

case is unimportant), the receiver will shut itself down. Typing "control c" (Ctrl key and c at the same time) in the receiver's window will also shut down the receiver.

As an example, double click on the IPC icon. This will open a small window on the Workbench and display the message "Message receiver ready". Now in the CLI, making sure to be in the same directory as IPC, type "ipc 'Some sort of message'" without the double quotes. The single quote around the argument string is necessary, otherwise only the first word will be printed. Almost magically, the argument you supplied will appear in the receiver window. Amaze your friends, hours of enjoyment for the entire family. NOT!

I'm afraid this is a bit of a non-event in the "programming excellence" stakes. Its only real reason for existence is to demonstrate message ports and passing messages. And so on to the listing.

IPC was compiled with SAS/C version 6.5 using the following options:

```
STRINGMERGE
ERRORREXX
OPTIMIZE
LINK
SMALLCODE
SMALLDATA
VERBOSE
STRIPDEBUG
GLOBALSYMBOLTABLE=
GST:LIBS _GST
```

Lines 1-24 are just a comment header to describe what this code does and other relevant information.

Line 25 defines a macro called `__USE_SYSBASE`. This instructs the compiler to perform some voodoo when generating any calls to the Exec library. It speeds up the calling process on Amigas with

68020 and greater processors.

Lines 26-33 include the header files needed by this program to compile successfully. These header files include information on the structures internal to the Amiga operating system, as well as letting the compiler know any values that may be used.

Line 34 includes a separate prototypes file. This file contains forward declarations for the compiler and looks like this:

```
ULONG SetupMsg_Port(char *);
void RemoveMsg_Port(void);
void main(int, char **);
```

Lines 35-39 set up a version string which can be displayed using the `C:version` command. The header file `IPC_Rev.h` is generated by a program called 'bumprev' which is in the public domain.

`IPC_Rev.h` contains the following:

```
#define VERSION 1
#define REVISION 1
#define DATE "14.10.94"
#define VERS "IPC 1.1"
#define VSTRING "IPC 1.1 (14.10.94)r"
#define VERSTAG "\0$VER: IPC 1.1 (14.10.94)"
```

The IPC program uses only the `VERSTAG` macro.

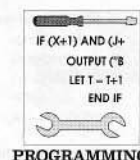
Lines 40-49 define the message structure and a couple of port names. The port names are used to find the port by its (hopefully) unique name.

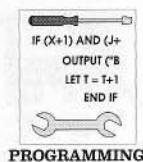
Lines 50-55 declare the message port and message structure.

Lines 56-59 define the library base used in the program. IPC only uses calls in the Exec library.

The SetupMsg_Port() routine

Lines 59-68 create a message





port with the name supplied as an argument to this routine. If the message port is created successfully, the signal bit of the port is returned as a mask, otherwise zero is returned.

The RemoveMsg_Port() routine

Line 76 declares a local variable. This is a pointer to the message structure and is used to empty any messages that have been queued to the port before the program deletes the port.

Lines 80-86 first check to make sure there actually is a port. If there is one, loop getting messages into the local variable until there are no messages left in the queue. If the message is of type NT_MESSAGE, it also requires a ReplyMsg(). In the case of a transmitter, the message appearing at the port is the receiver replying to the message. The type of this message is NT_REPLY_MSG and doesn't need further action. When all outstanding messages have been removed from the port, we delete the port.

The main() routine

Lines 92-94 are local variables used in the main() routine.

Lines 95-98 open exec.library.

Line 103 is where the program decides which personality to assume. They call the Exec function FindPort() with the name of the port you wish to find as the argument. If the port already exists, the result of this if test will be true, so the program sets itself up as a transmitter.

Lines 104-138 are the transmitter section of the code. At line 108 it allocates a message port. This will be used to receive a reply message from the receiver program.

Lines 112-119 allocate the message structure and initialise

some of the fields. These are the node type, NT_MESSAGE, the length of the message structure and the address of the reply port. The program then checks if an argument was supplied and if so, sets the ipc_Str field in the message structure to point to the argument. If an argument was not supplied, the ipc_Str field is set to NULL. This is probably unnecessary, since the entire message structure is cleared during allocation, but it's here just to make it clear what's going on.

Lines 120-126 are the important bit. First they call Forbid(). This is an Exec call that turns off multitasking but unlike Disable(), which I used in my last article, Forbid() leaves interrupts intact. We next find the port again, (just in case it has gone missing by now) and send the message to the port. The program then Permit()s multitasking again. The reason for turning multitasking off during this is that there is a possibility that the port could be removed from the universe after the program's found it but before it sends the message. This would be bad, and would encourage an appearance by the Guru.

Line 131 puts the program to sleep and waits for a reply to come from the receiver program. When the receiver has finished with the message it will ReplyMsg() the message, which will send a message to the reply port and wake the program up.

Lines 132-133 delete the message port and free the memory allocated for the message. The program then falls through to line 168 where it calls exit() and ends the transmission section of the program.

Lines 139-167 are the receiver section of the code.

Line 142 sets up the receiver message port. This is the port where messages will arrive from

the transmit programs.

Line 143 displays a message in the window to let you know that the receiver is active.

Line 144 begins the loop, which will loop until the variable waiton is false.

Lines 145-149 are where the program waits for a message. First it checks to see if a message has arrived already. If not, it Wait()s on two signals, the signal for the port which indicates a message has arrived and a "control C" signal which says "the user just typed 'Ctrl C' and probably wants to exit the program or something...". If the signal was a "control C" signal, it sets waiton to false. The continue statement then sends the program back to the beginning of the while loop, and a test of the waiton variable is made again. If the user typed "control C" the test will fail break the loop. Otherwise the program gets the message and goes to line 153.

Lines 153-157 checks to see if the string in the message to print contains the word "QUIT". If it does, set the variable waiton to false and execute a continue instruction again, to return to the test at the beginning of the while loop.

Lines 158-163 print the string to the receiver window and reply to the message, letting the transmitter program know the receiver's finished with the message. It then continues back to the beginning of the while loop, and waits for the next message.

Lines 164-166 shut down the receiver. First they remove the message port, then display a message to let the user know the receiver is no longer active. They then fall through the bottom and exit the program.

That's it. Not particularly extraordinary, but it shows how to use message ports. Until next time, see you!

□


```

Line No.      Source
1  /******
2  /*
3  /* $Filename:   Work:Dev/C-Saws/ACAR/IPC.c $
4  /* $VER:       1.0 $
5  /* $Date:      20 Oct 1994 $
6  /*
7  /*
8  /*-----*/
9  /*                      Legal Stuff
10 /*
11 /* This code is placed in the public domain and may used by anyone for anything. */
12 /* No warranty is issued or implied. This code may or may not do what it is
13 /* supposed to do and anyone using it does so at his/her own risk. So there... */
14 /*-----*/
15 /*
16 /* $Description: Example code to demonstrate Inter-Process Communications $
17 /*
18 /* $HISTORY:
19 /*
20 /* <1>   20 Oct 1994 18:03:46
21 /*      Initial Coding
22 /*
23 /* End of Work:Dev/C-Saws/ACAR/IPC.c header
24 /*-----*/

25 #define _      _      USE_      SYSBASE

26 #include <proto/exec.h>
27 #include <exec/types.h>
28 #include <exec/memory.h>
29 #include <exec/ports.h>
30 #include <libraries/dos.h>
31 #include <stdio.h>
32 #include <stdlib.h>
33 #include <string.h>

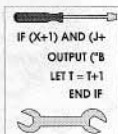
34 #include "IPC_      Protos.h"

35 /*
36 *--- Set up version strings
37 */
38 #include "IPC_      Rev.h"
39 UBYTE vers[] = VERSTAG;

40 /*
41 *--- Set up our message port name and message structure
42 */
43 #define IPC_      RECV"IPC_ PORTRECV Port"/* Public port name */
44 #define IPC_      XMIT"IPC_ PORTXMIT Port"/* Public port name */

45 struct IPCMsg {

```

PROGRAMMING

```
46     struct Messageipc_      Msg;
47     char                    *ipc_      Str; /* Pointer to string to display */
48 };

49 #define IPC _ MSGSIZE sizeof(struct IPCMsg)

50 /*
51  *--- Message and port declarations for IPC
52  */
53 struct MsgPort      *ipcport;
54 struct IPCMsg      *msg;

55 /*
56  *--- Define Library Base
57  */
58 extern struct ExecBase      *SysBase;

59 /*
60  *--- SetUpMsg _ Port() - Create our message port
61  */
62 ULONG  SetUpMsg _ Port(char *portname)
63 {
64     if (ipcport = CreatePort(portname, 0))
65         return( (ULONG) (1L << ipcport->mp_      SigBit)
66     else
67         return(0);
68 } /* SetUpMsg _ Port() */

69 /*
70  *--- RemoveMsg _ Port() - Delete the port created in SetUpMsg _ Port().
71  *--- Also reply any messages queued at the port before actually
72  *--- deleting it.
73  */
74 void RemoveMsg _ Port(void)
75 {
76     struct IPCMsg      *m;

77     /*
78     *--- Clean up port first before deleting
79     */
80     if (ipcport) {
81         while (m = (struct IPCMsg *)GetMsg(ipcport))
82             if (m->ipc _ Msg.mn _ Node.ln _ Type == NT _ MESSAGE)
83                 ReplyMsg((struct Message *)m);

84         DeletePort(ipcport);
85     }
86 } /* RemoveMsg _ Port() */
```



```

87  /*
88  *--- Main routine
89  */
90  void main(int argc, char **argv)
91  {
92      struct MsgPort*port;
93      ULONG  portsig;
94      BOOL   waiton = TRUE;

95  /*
96  *--- Open Exec Library
97  */
98      SysBase = (struct ExecBase *)*((ULONG *)4);

99  /*
100  *--- Check to see if we are already here, if so send message in argv[1] else
101  *--- set up port and wait for incoming messages.
102  */
103      if (port = FindPort(IPC _ RECV _ PORT)) {

104  /*
105  *--- Port already exists. Make ourselves a transmitter and send message in argv[1]
106  *--- Set up a message port for us to receive a reply to our message from.
107  */
108          if (portsig = SetUpMsg _ Port(IPC _ XMIT _ PORT)) {

109  /*
110  *--- Allocate a message and fill in appropriate values
111  */
112          if (msg = (struct IPCMsg *) AllocMem(IPC _ MSGSIZE, MEMF _ PUBLIC|MEMF _
CLEAR)) {
113              msg->ipc_Msg.mn _ Node.ln _ Type = NT _ MESSAGE;      /* Make up message ... */
114              msg->ipc _ Msg.length = IPC _ MSGSIZE;                /* Including reply
port */
115              msg->ipc _ Msg.mn _ ReplyPort = ipcport;

116              if (argc > 1)
117                  msg->ipc _ Str = argv[1];
118              else
119                  msg->ipc _ Str = NULL;

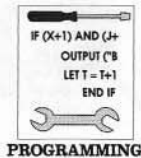
120  /*
121  *--- Turn off multitasking and send message.
122  */
123              Forbid();

124              if (port = FindPort(IPC_RECV _ PORT)) /* Make sure port is still there */
125                  PutMsg(port, (struct Message *)msg);

126              Permit();

127  /*
128  *--- Message sent, now wait for receiver program to reply our message

```

```

129  *--- so wee can safely deallocate memory etc.
130  */
131          Wait(portsig);
132
133          RemoveMsg _ Port();
134
135          FreeMem(msg, IPC _ MSGSIZE);
136      } else
137          puts("Could not allocate memory for message!");
138
139      } else {
140
141      /*
142      *--- Message receiver not present. Set up and wait for signal from transmitter
143      */
144
145          if (portsig = SetUpMsg_ Port(I_RECV _ PORT)) {
146              puts("Message receiver ready");
147
148              while (waiton) {
149                  if ((msg = (struct IPCMsg *) GetMsg(ipcport)) == NULL) {
150                      if (Wait(portsig|SIGBREAKF _ CTRL _ C) == SIGBREAKF _ CTRL _ C)
151                          waiton = FALSE;
152                      continue;
153                  }
154
155                  if (strnicmp(msg->ipc _ Str, "QUIT", 4) == 0) {
156                      waiton = FALSE;
157                      ReplyMsg((struct Message *)msg);
158                      continue;
159                  }
160
161                  puts(msg->ipc _ Str);
162                  ReplyMsg((struct Message *)msg);
163              }
164
165          RemoveMsg _ Port();
166          puts("Receiver shut down");
167      }
168
169      exit(0);
170  } /* main() */

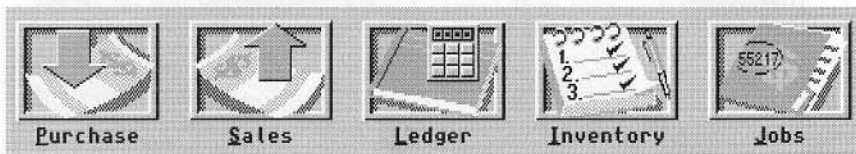
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Easy Ledgers 2

First Impressions

By Andrew Farrell



EasyLedgers is not a new program. It originated with a company called Sybiz, who saw fit some time back to abandon the Amiga version in favour of their lucrative Macintosh and MS-DOS alternatives.

Sybiz once admitted the Amiga version was the best of the three, but the software needed updating to work reliably under Workbench 2.x. There was also some room for improvement. At a time when some Amiga software publishing concerns were moving the tent pegs in, GP-Software went on the acquisition trail and landed the rights to the program.

Greg Perry (yes, the GP in GP-Fax, GP-Term and GP-Software) wasted no time giving EasyLedgers a major overhaul. Small-Biz Software was formed and the new EasyLedgers Mark Two entered the fray of Amiga accounting packages. Since then, GP has teamed up with another famous pair of Amiga initials - JP. DirOpus - the file management utility found in more startup drawers across the world than its author Jonathan Potter cares to imagine, has joined the GP stable. All this bodes well for users of Ea-

syLedgers. Choosing an accounts package is not a decision to be taken lightly. If you're serious about your business, you'll know the value of financial information. Cash flow projections, profit and loss statements, liquidity ratios and accounts receivable summaries - the life blood of every good manager. The right accounts package should generate information to make managing your business easier. It should also be easy to use, and able to cope with the requirements of your business. In all these areas EasyLedgers scores reasonably well. But it's not perfect.

We use Easyledgers here at Amiga Review, and have enjoyed several months of relatively trouble free operation. EasyLedgers lives up to its name. It sports a very easy to use interface that follows Commodore's style guidelines reasonably closely. You can use keyboard shortcuts, pull down menus or an assortment of buttons and gadgets. To run the program you'll need 2Mb of RAM and Workbench 2.x or better. You'll also need the program dongle - an electronic key - plugged into the joystick port. Without it, EasyLedgers will not run.

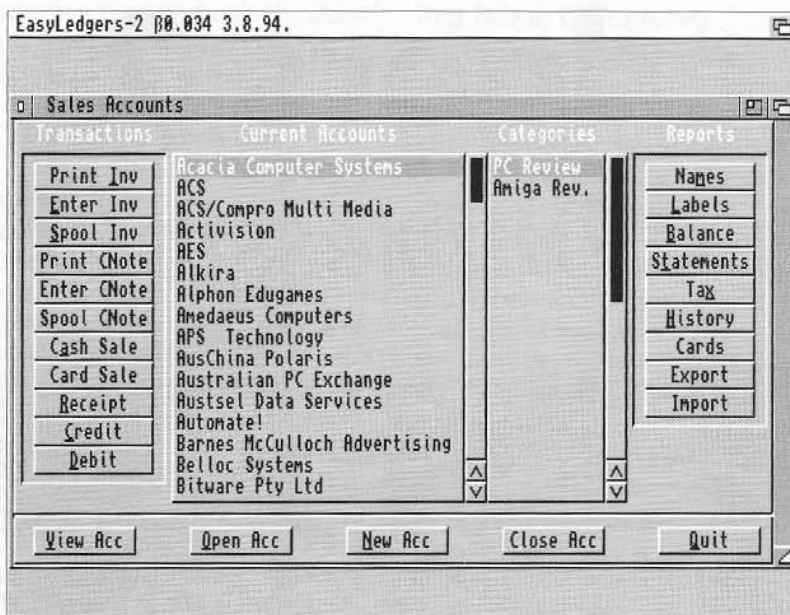
Getting Started

Experimentation is the best teacher. With EasyLedgers you can have many different sets of accounts - for different businesses of course. So it's easy to set up a practise set to start tinkering. Each account has several levels of password protection so a person doing straight data entry can't cause major damage. What would have been nice is a few standard sets of Ledger accounts, set up for particular types of businesses.

Easyledgers' manual assumes you don't know anything about accounting. Debits and Credits are explained, and everything involved in setting up the system is organised into step by step instructions.

The program is arranged into books - Sales, Inventory, Purchases, Ledger and Job Cards.

Getting information into these books is where EasyLedgers has been considerably improved. If you already have a database of clients, for example, it should be reasonably simple to get the information into Easyledgers using the import option in the Sales book. The same function is available in



Inventory and Purchases. Getting a list of products or clients back out of EasyLedgers is just as simple.

The Sales Book

EasyLedgers can track sales tax, discounts and sales according to staff and work with an open item or balance forward method of invoicing. Each account can also have one of three price scales, and you can store credit card details - fast becoming a more popular way of paying for small accounts. Invoices can be printed on the fly, or stored for printing as a batch. Non-inventory invoice lines can be entered, and invoices can be quickly generated from quotes prepared in the Jobs book. Separate shipping details are allowed, but these are not stored with each account.

I would like to see the option of printing statements that simply show an amount due and an amount overdue - not the usual 30, 60 and 90 days - which tend to give some customers the feeling you're happy to extend credit for up to 90 days. It would also be handy to create a to-do list from the receivables report to ensure slow payers are chased up.

A nice touch is the way accounts in most parts of the program can be organised into groups - although there doesn't seem to be any way of moving a client from one group to another. In the Sales Book you might divide up your sales according to each state, or perhaps by the source of the client or whether they are retail or wholesale. You decide on the category names. Within each group, the listing is automatically alphabetically sorted. There's no need to remember strange account codes for anything.

Job Cards

Easyledgers can track work involving labour or a combination of labour and inventory. The Job Card section is normally only found on quite expensive accounts packages. If you're a tradesperson who prepares many quotes, or work in a service based industry, the Job Cards section could be just what you need. Job Card invoices may follow a letter style, a letter style with a detailed breakdown or a commercial style invoice with an itemised list of materials and breakdown of labour charges.

Printers and Stationary

Although any Amiga Preferences printer is supported, EasyLedgers includes a special driver for LaserJet compatibles. This solves a slight quirk with the Commodore drivers' inability to deal with 132 column pages and condensed print. It works. We use it. Postscript was not as successful. Don't try it. If you prefer preprinted stationery to your own, EasyLedgers can take advantage of various Rediform invoices and statements. A form designer to make it possible to customise the layout is in the works.

Wrap Up

The manual is reasonably good, although there are no screen shots and the index is a little bit light on. Lots of handy tips and notes are included, which I found a big help in finding the best way to use the program. Like any accounts package, at the end of the day you have to be prepared to learn the jargon if you hope to get the most out of your software. Although the documentation starts off with a softly softly approach, before too long you're up to your eyeballs in credits, debits, journals and ledgers.

I have not yet found time to try out all of EasyLedgers. It is possible to run just part of the program, to just do accounts receivable for example - and this is what we're currently doing. Soon, we'll be switching over to using all of EasyLedgers' features and I'll report more on how well the package performed once we've had some more first hand experience.

For more information contact Small-Biz Software on (07) 491 9190 RRP is \$399.





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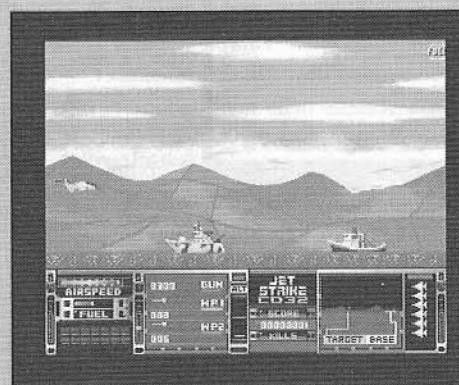
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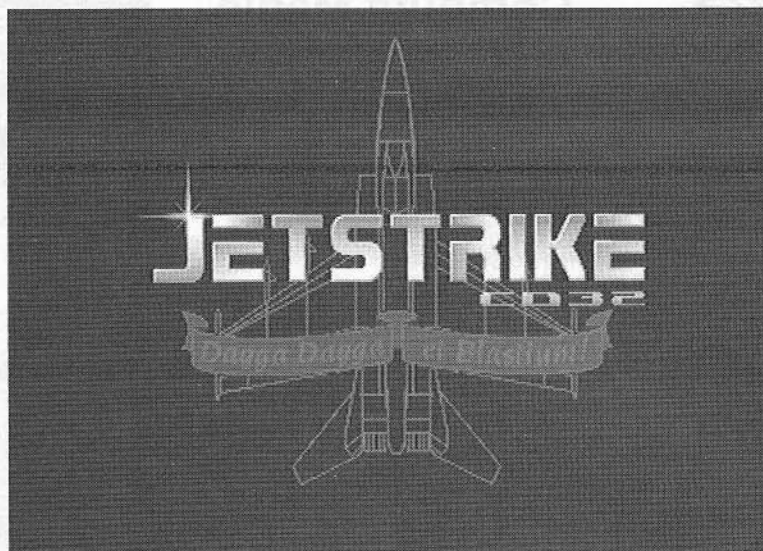
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Jet Strike's story line is very silly indeed. The farcical secret agents versus bad guys plot sets the tone for the whole manual, which is well written and amusing - a change from the super-slim afterthoughts that come with most games these days.

You get tons of planes to choose from. When flying regular missions, you can pick from up to 39 aircraft in the disk versions of the game and even more on CD32; trainers, jet fighters, attack planes, historical planes from World Wars II and I, and even a fire-breathing dragon for when you're feeling silly (don't get excited - one hit and it's toast).

The planes all have noticeably different characteristics, both in flight and in weapon capabilities. To encourage you to fly the older and less powerful planes, you get score bonuses - you get a lot more points for finishing a mission with the Fokker triplane or the hang glider (!) than with the MiG-29 or F-16. You also get limited supplies of the funkier planes, and infinite stockpiles of the dodgy ones.

Jet Strike's control system is idiosyncratic. To make your plane rotate clockwise, you push the stick down, and vice versa. This means that when you're flying rightwards, up makes the plane go up and down makes it go down. But turn around, and the stick

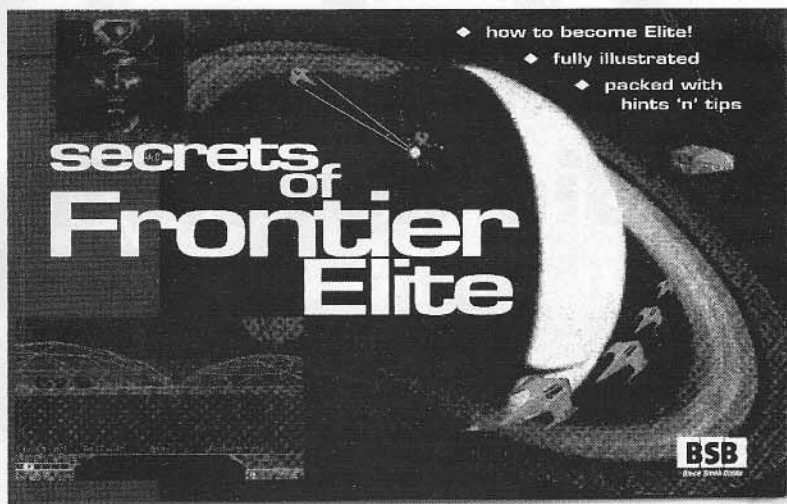
works the other way around. I had some difficulty getting my head around this concept, and in moments of stress tended to push the stick the wrong way and plough a furrow. There are plenty of other control options, which are easy to use from keyboard but a bit cramped on CD32 joypad.

One of the best things about Jet Strike is the Aerolympics, where you and your friends can take turns doing a variety of missions - pickups, dropoffs, bombing, flying through gates and so on - to see who's the topes gun. Crash and you get no points.

Jet Strike's actual plane behaviour gives only a passing nod to realism; you can do the old S-shaped altitude gaining takeoff, you can land by cutting the throttle, floating towards the runway and kicking a little speed on just before you touch, and recovering from horrible stalls is usually just a matter of getting level and punching the throttle.

Despite the simplified handling, this is not an easy game. Landing consistently takes practice, hitting things with bombs is tricky and some of the missions are very demanding indeed. But don't let that hold you back - if you've got some time to devote to a game, this is a great one to go for.



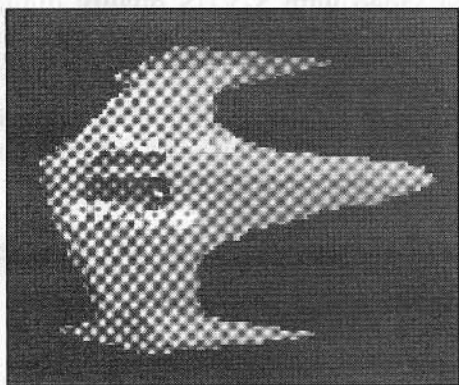


► This nifty little hint book comes from Bruce Smith Books, normally purveyors of less amusing books on programming and related Amiga system gubbins. This time it's the classic space epic, Frontier, that gets the treatment, from a 128 page half-A4 black and white book with loads of illustrations.

Secrets contains hints for everyone from beginners to experts. It takes you from the basics of landing, docking and working the game screens through combat, mining and trading all the way up to juicy stuff like how to get the Mirage, the most powerful ship in the game, and how to cheat for infinite money.

There's a well annotated list of all the ships

The book covers most aspects of Frontier, but it's not perfect. For



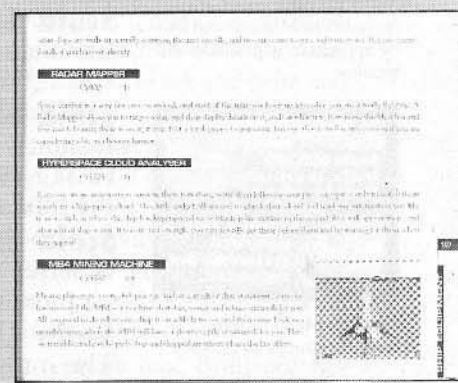
example, it describes the gigantic Panther transport ship as an easy target for pirates, and doesn't mention that you can easily make a Panther functionally indestructible by loading it with about a hundred shield generators and all other mod cons.

In this kit, a Panther can park outside a station, shoot it and let all the resulting police ships simply ram into it, for negligible damage; you can only die by ramming a planet.

Frontier, however, doesn't reward pilots of such tricked up Star Destroyers; they're too slow to do any of the missions.

The book also doesn't tell you about the more important military missions, except for passing references to nuking cities; it says that's spoil the surprise. It doesn't seem to care about spoiling the surprise of the Mirage, or the old 660 light year hyperspace bug, though.

But this is nitpicking. Overall, this is an excellent guide to getting the most out of the blockbusting sequel to Elite. Get it if you're a beginner; have a flip through first if you're an expert.



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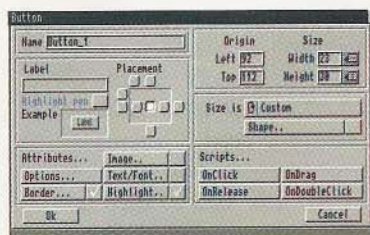
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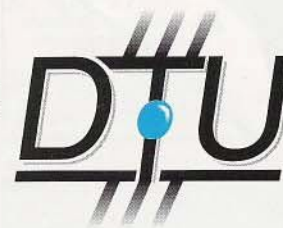
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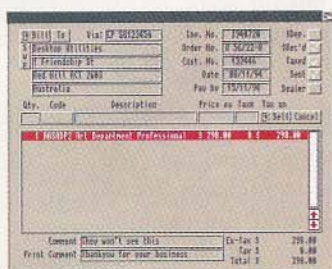


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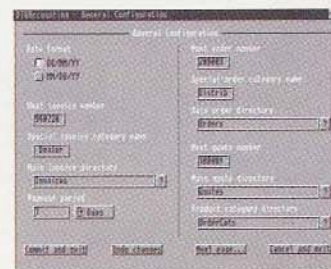
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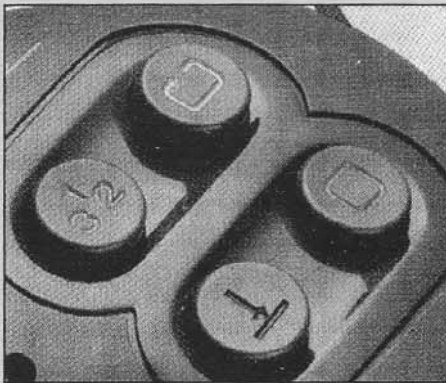


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Competition Pro Super CD32 Controller

Contact: Unitech
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Competition Pro Super CD32 Controller

Commodore had a habit making groovy computers with lousy input devices. They had three goes at making an Amiga mouse and all were crummy - the first one had switches held together with sticky tape. In this great tradition, the CD32 also comes with a distinctly dud control pad; squishy membrane switches with no feel to speak of and, of course, that brilliant little rubber thing that sticks onto the thumb pad and falls off five minutes later.

To fill the gap, you can now get the Competition Pro Super CD32 Professional Control Pad, which grandiloquent name is attached to a souped up, solidier version of the Commodore pad.

The Competition Pro pad has the croissant shape of a Sega controller, and the same rubber membrane switches, which don't have the definite click of a microswitch but do have enough spring that you can feel when you've pushed them; they last pretty well, too. All the buttons are in the same places as the original, but they look different.

The thumb pad itself is much the same as the little rubber thing, only made of plastic. The four colour buttons are grey and all the same size, with their function

printed in the appropriate colour on top. The fast forward and rewind buttons are much as you'd expect them, but for some reason the pause/play button's been split in two; both sub-buttons do the same thing.

There are also six little switches for setting rapid fire. You can set autofire (continuous fire all the time) and turbo fire (autofire only when you've got the button down) independently for all four colour buttons and the forward/back buttons too.

There's also a slow motion switch, but this works by applying autofire to the pause button and hence doesn't work very well; you can't react any quicker because the machine's freezing and unfreezing continuously, and if the game you're playing use the pause key for something else (Jet Strike uses it for eject!) the option's not much use.

The Competition Pro pad feels genuinely good - not just better than the Commodore one. At only \$25 (about the same price as a replacement Commodore controller), it's a recommended buy.

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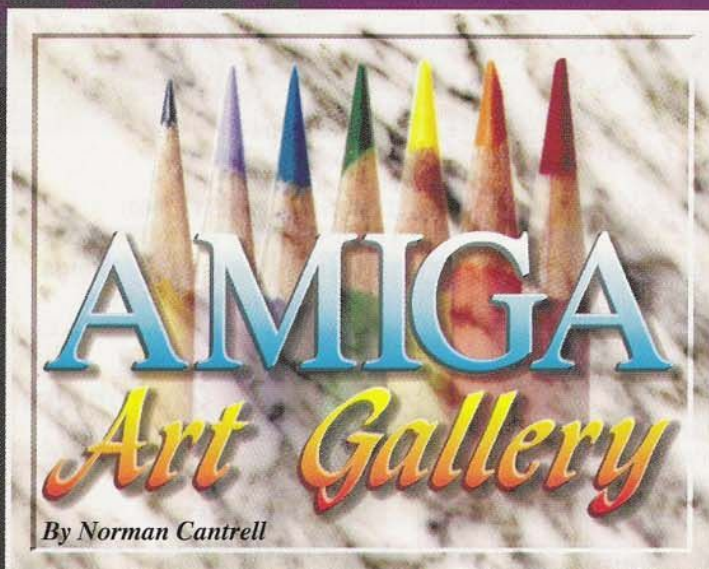
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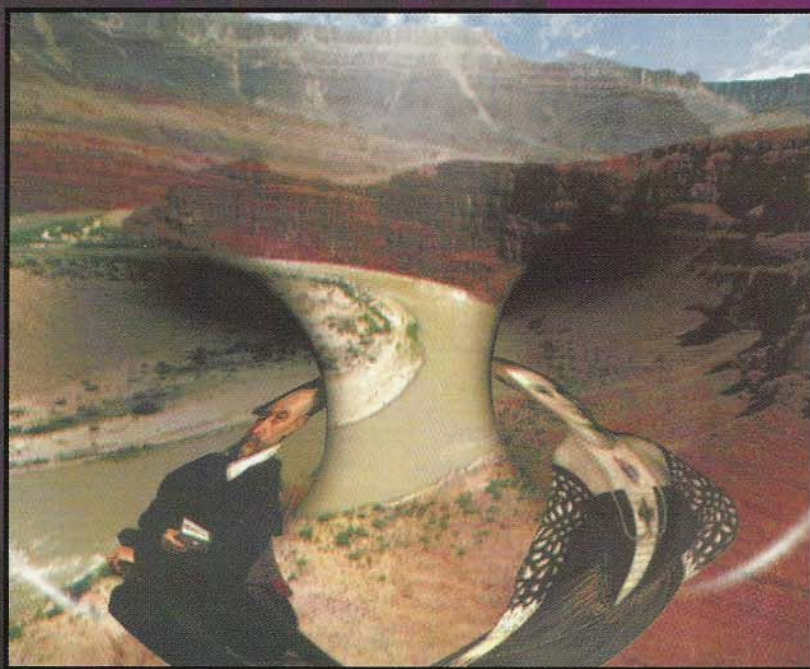
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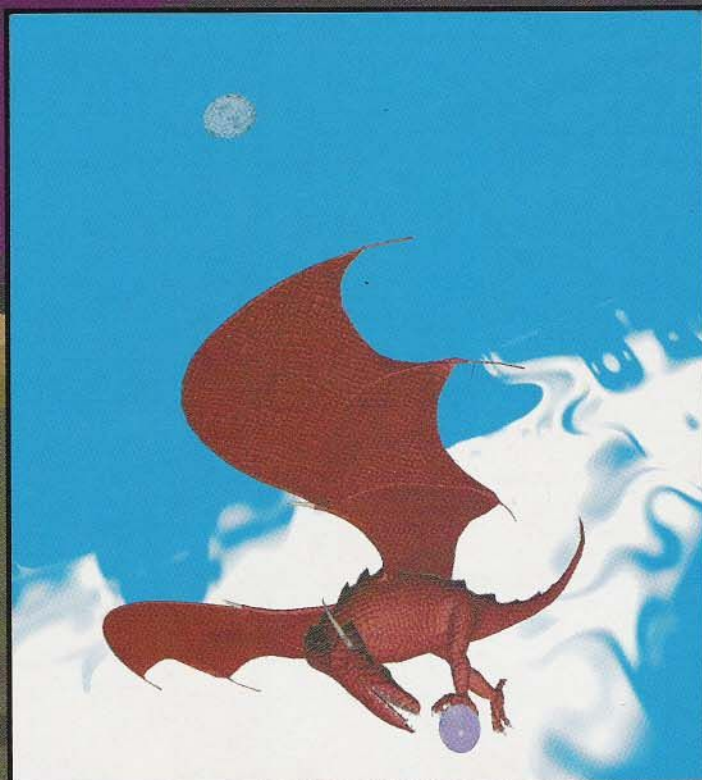
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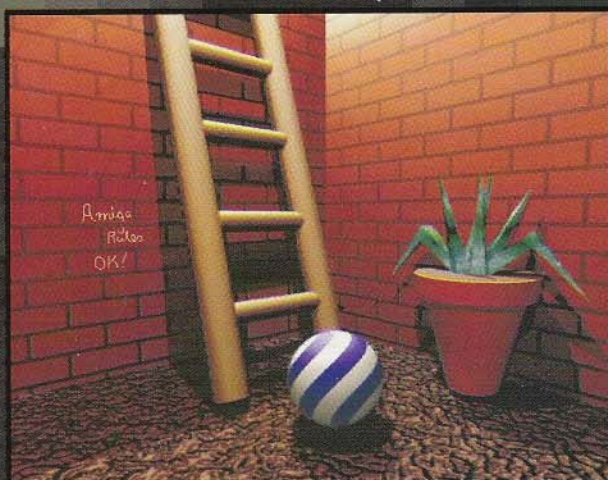
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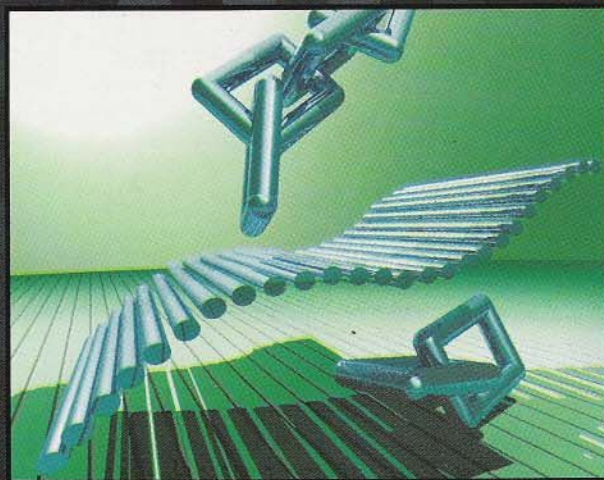
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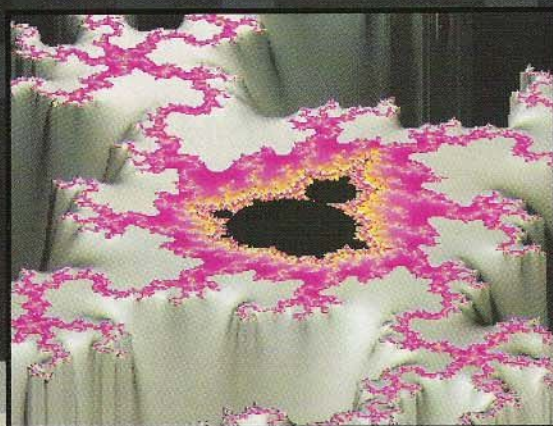


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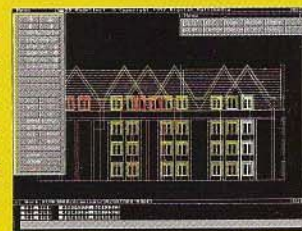
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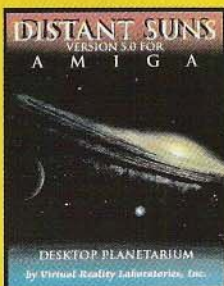
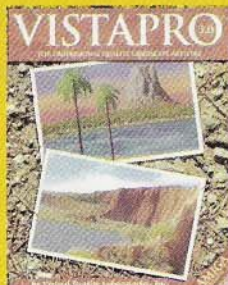


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Subscriber Information

Australian Amiga Review changed publishers as of the July '94 edition, but our editorial team has remained much the same. The magazine is now 100% produced using the Amiga, and it is 16 pages bigger.

We've been working on ensuring subscribers receive their copies of the magazine before it goes on sale at newsagents. Unfortunately, we've faced two problems in achieving this. Firstly, Amiga Review didn't change hands

until late June, so the July edition was not printed until late July.

We've caught up by doing this combined November/December issue, so that problem's been overcome. We've also had some problems with our shipping arrangements. These have now changed and we hope the problem has been fixed. For more information call (02) 879 7455.

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For Reader Classifieds see pages 38-40

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Contributors WANTED

Now that Amiga Review is bigger, we're looking for writers. Even if you've written for other Amiga magazines, we promise to give you a chance!

Plain English explanations, in an entertaining style, offering intelligent information on getting more out of the Amiga are preferred. Any wordprocessor format is acceptable, although straight ASCII is preferred. IFF images should include captions in a separate text file (or on the end of the main text file).

You can forward your contributions on disk or modem them to us by calling (02) 879 7455 first and then, once okayed, ringing back on our modem line on (02) 879 4236. Alternately, send them to The Editor, Amiga Review, PO Box 288, Gladesville 2111.

We do pay for contributions, starting from \$50 per 1,000 words up to \$150 for really good stuff. Please don't send your original disk, as we cannot guarantee safe return.

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